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Railway Age

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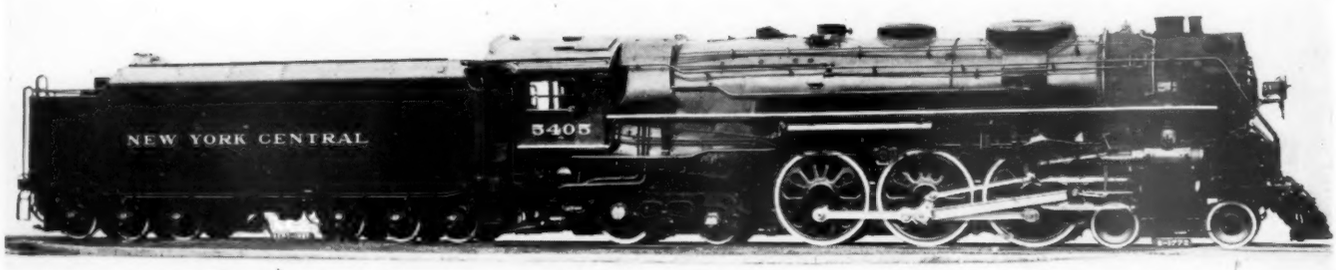

Published weekly by Simmons-Boardman Publishing Corporation, 1309 Noble Street, Philadelphia, Pa. Entered as second class matter, January 4, 1933, at the Post Office at Philadelphia, Pa., under the Act of March 3, 1879. Subscription price, $6.00 for one year U. S. and Canada. Single copies, 25 cents each. Vol. 103, No. 14.

Published every Saturday by the Simmons-Boardman Publishing Corporation, 1309 Noble Street, Philadelphia, Pa., with editorial and executive offices: 30 Church Street, New York, N. Y., and 105 West Adams Street, Chicago, Ill.

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The Railway Age is a member of the Associated Business Papers (A. B. P.) and of the Audit Bureau of Circulations (A. B. C.).

Subscriptions, including 52 regular weekly issues, and special daily editions published from time to time in New York, or in places other than New York, payable in advance and postage free. United States, U. S. possessions and Canada: 1 year, $6.00; 2 years, $10.00; foreign countries, not including daily editions: 1 year, $8.00; 2 years, $14.00.

Single copies, 25 cents each.

H. E. McCandless, Circulation Manager, 30 Church St., New York, N. Y.

Railway Age

With which are incorporated the Railway Review, the Railroad Gazette and the Railway Age-Gazette. Name registered U. S. Patent Office.

Vol. 103 October 2, 1937 No. 14

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The Railway Age is indexed by the Industrial Arts Index and also by the Engineering Index Service

JUST AROUND THE CORNER!

CARLOADINGS are up; gross earnings are increasing; prospects are excellent for increased traffic density. Good times are no longer "just around the corner." *Now* is the best time to install "Union" Automatic Block Signals, Centralized Traffic Control, Continuous Cab Signals, Interlocking and Electro-Pneumatic Car Retarders. These signal systems provide increased safety of train operation, shortened running time and decreased operating costs in these days of highly competitive transportation, when reliability and safety of service are of major importance.

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The Week at a Glance

CARLOADINGS: In the September 18 week revenue loadings totaled 827 thousand cars, up 4.6 per cent above last year but down almost 17 per cent under 1930.

●

REVENUES OFF: How poorly the railroads can afford to increase wages—in fact why they can't really afford to pay present ones—is shown in preliminary earnings statements for August. Here are two or three reports of August net railway operating income taken at random which show the unhappy turn: New Haven $2,092, as against $722,439 last year; S. A. L. $23,993, compared with $126,914 last year. The Katy had a net deficit of $47,000 in August, as against $73,000 net income last year.

●

CAR INQUIRY: The Santa Fe is inquiring for 17 coaches and 20 baggage cars.

●

RATE RISE PARLEY: Railroad executives held a meeting in Washington last week, and numerous newspaper accounts related that they had decided to ask authority for increases in rates. A responsible officer in attendance characterized such reports as plausible guesses arising from the obvious plight the railroads are in by reason of rising costs and the failure of traffic to increase as rapidly as it did earlier in the year.

●

THIN TRAFFIC LINES: "Posthumous" reports of the Federal Co-ordinator's staff covering the operations of short line railroads and thin traffic branch lines of Class I carriers have been published by the Short Line Association and are summarized in an article in this issue. One suggestion for continuing poor-paying lines in operation is that managements and unions get together to modify agreements which make labor costs excessive on such lines.

●

MILWAUKEE CASE: The reorganization proceedings for this road, which were closed by Commissioner Porter last week, have been reopened by the I.C.C. upon assurance of a group of institutional investors that they will file a reorganization plan. Hearings are assigned for February 1, 1938, and all plans must be in by January 10.

●

WHY JOBS ARE LOST: In its September 28 issue, the publication "Labor" takes issue with figures we presented in our September 18 issue showing the extent of the "strike" of capital in the railroads and industry because of its poor "wages." "Labor" tacitly admits our contention, but tries to make something out of the fact that the figures seemingly show that the "strike" is relatively more serious in industry as a whole than it is on the railroads. All of which is precious little consolation to railroad employees who have been furloughed in the past few weeks as a necessary result of the wage-hiking tactics of the union leaders whose salaries these unfortunate employees have helped to pay. It is new capital which keeps the industry alive and makes for greater "productivity of labor" out of which wage increases and greater employment, if any, must come. That the railroad future is dying somewhat less rapidly than some other industry, even if true, is beside the point, when with any degree of foresight on the part of the labor tycoons, all could prosper, with greater and not less employment all around.

●

GOOD NEWS FROM MO.: The Trans-Missouri-Kansas Shippers Board meeting in St. Louis last week predicted for the fourth quarter of this year a rise of 226 per cent in fruit shipments, 169 in potatoes, 150 in canned goods and 81 in grain—providing, with reductions, a net gain of 30,000 cars over last year.

●

JEFFERS HEADS U. P.: Carl R. Gray, president of the U. P., became vice-chairman of the board on October 1, and was succeeded in the presidency by W. M. Jeffers. The careers of the two well-known railroaders are outlined in an article herein, with some details of performance of the remarkable property to which their skill is devoted.

●

TRUCK LOADINGS UP: The loadings index compiled by American Trucking Associations shows that commercial truckers handled 11.5 per cent more tonnage in August this year than they did in August, 1936. *"Notable advances were made over 1936 in the hauling of automobiles and petroleum products."*

●

NEW I.C.C. DIV.: The Interstate Commerce Commission has set up a new unit, designated as Division 6, which will be the accounting division. Members are Commissioners Eastman, Mahaffie and Splawn. In the Motor Carrier Division Commissioner Rogers has supplanted Commissioner Caskie who has transferred his specialization to Division 2, the principal rate division.

●

WHO MANAGES R.RS.?: Railroad managements in negotiating wages are not free agents, but are laboring under the fear of worse treatment by the government if they do not make concessions to the unions. The leading editorial contends that the presence of this fear virtually constitutes government management of wages, which make up ⅔ of railway expenses as government already manages rates and fares which provide 100 per cent of railway revenues. Can such a condition really be called private ownership and operation? The editorial points out that unwarranted wage increases are being met by curtailed purchases and by retrenchment, which is costing railroad employees their jobs. If the government operated the railroads outright, perhaps the cost of unjustifiable wage advances would be met in a less harmful manner—at any rate the present inconclusive situation is utterly unsound, and cannot long continue.

U. P. FINED: The Union Pacific has paid fines totaling $505 following a plea of guilty to an allegation of unlawful operation of motor vehicles between Shoshone, Idaho, Ketchum and Sun Valley Lodge, the road having since received a certificate legalizing the service.

●

M. P. BUS PROTEST: The four transportation brotherhoods have joined the Yazoo & Mississippi Valley in a protest to the I.C.C. against the petition of the Missouri Pacific for a re-hearing on the decision which bars its buses from the Natchez-New Orleans route. The brotherhoods contend that their members in the service of the Y. & M. V. would be disadvantaged by the invasion of that road's territory by another railroad.

●

TRACK SAVINGS: Protecting expensive treated ties from wear and "spike killing," and reducing the cost of maintaining rail joints (said to represent 45 per cent of total track labor time) are discussed by H. S. Clarke, maintenance engineer of the D. & H., in a paper published herein. Other maintenance subjects included in the presentation (from the Roadmasters' Convention) include life of crossties, relations of m. of w. and stores departments and curing soft roadbeds.

●

ROUGH HANDLING PROBE: Operating department representatives, including switchmen, are included in a committee which is preparing to make an intensive study of rough handling in the Chicago terminals. The decision to make the investigation followed a recent meeting of 100 superintendents, yardmasters and claim agents, at which was brought out, among other interesting observations (reported elsewhere herein), that following the advice of switchmen had solved a serious rough handling problem in a hump yard.

●

"SUNBEAMS" TAKE BOW: The steam-powered streamliners of the Southern Pacific which have been operating on the "Sunbeam" schedules between Houston and Dallas since September 19 are described in an illustrated article in this issue. Car frames are of Cor-ten and sheathing of stainless steel, assembled by electric welding, with a weight reduction of ⅓ under similar cars of conventional construction. An entire train (of which there are 2) weighs 672 tons, with locomotive and tender, and has 280 salable seats.

●

I.C.C. DUTY TO ROADS: Commissioner Eastman in addressing the Transit Association last week expressed the view that regulation's purpose is not merely to protect the public from extortion but also to help provide "efficient carriers who can keep up with the march of the times." Comforting words, Mr. Commissioner, at a time when this attitude was needed as never before—let's hope your fellow regulators, the shippers, the unions and the legislators quickly get to thinking the same way about it.

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Have We Private Management of Railways?

The present and prospective situation of the railway industry as a whole demands the most realistic possible appraisal. It is not easy for officers of individual railways to make such an appraisal. They inevitably are influenced in considering the problems and prospects of the industry by the real or apparent prospects of their own properties. Take, for example, the advances in wages recently granted to members of the fourteen non-operating unions and those now being demanded by the five operating unions. Some railways can, with their present gross earnings, stand them without making drastic retrenchments. Some, in order to stand them, must make drastic retrenchments. Still others already are bankrupt and, by advances in wages, unless they are offset by advances in rates, will be pushed deeper into the mire of insolvency. The managements of these different classes of railways naturally do not regard advances in wages already made and those still being demanded with equal concern.

Fear of Government Curtails Freedom

The *Railway Age* has been opposed to all advances in railway wages under present conditions excepting those made to some of the lower-paid employees. It has been claimed by some labor leaders that this paper's attitude in this respect has not been in harmony with that of railway managements. Whether the attitude of the *Railway Age* is in harmony with that of railway managements is a matter of small importance. What actually is the attitude of railway managements is a matter of large importance. The *Railway Age* asserts without hesitation that a large majority of managements believe that general advances in railway wages under present conditions are without economic justification and can be defended from the standpoint of the managements only upon the ground that most managements have feared that if the railways did not agree to some advances they would have still larger advances directly or indirectly forced upon them by strikes or government. Fear of government has been the most potent influence.

Railway Managements and Wages

The situation raises some interesting and vital questions. One of them is whether we do not already have in most important respects actual government management of railways. Another is whether, if we already have actual government management in most important respects, it would be as bad for the nation, as many persons are inclined to believe, to adopt complete government management.

Let us consider first the question whether we do not actually now have government management in most important respects. It is the theory of the Railway Labor Act that only representatives of managements and employees will participate in the determination of wages and working conditions and that they will participate freely and equally—that they will meet as untrammeled equals in collective bargaining; that they will participate as untrammeled equals in deciding whether they will arbitrate; that they will have equal rights to accept or reject the findings of an emergency board appointed by the President; that the employees will have a right to strike and resort to peaceful picketing and that the managements will have an equal right to resist a strike by every legitimate means, including the employment of so-called "strike breakers".

Is this the real situation? It plainly is not. In the wage negotiations that recently have occurred, and that are still occurring, the representatives of railway management have constantly had one fear that the representatives of the employees have not. This has been fear of government—fear that if the managements did not grant some advances in wages the government, in

one way or another, would force them to grant still larger advances; fear that the government would not "stand for" a railway strike, but, if it occurred, would intervene in some way disadvantageous to railway management.

What this means is that railway managements have not felt as free as the labor union leaders have to exercise their own judgment in dealing with the present issue of railway wages. But if the ostensible managements of the railways do not feel free, because of fear of government, to follow their own best judgment in dealing with wages and working conditions, who is really managing the railways? The payroll in the first six months of this year was 64 per cent of total operating expenses and 48 per cent of gross earnings. To whatever extent the payroll is being determined, not merely by the untrammeled action of representatives of railway management and employees, but by fear of government, the major part of operating expenses is actually being determined by government.

Railway Managements and Rates

Other industries that have advanced wages have been free to advance their prices and have done so, whether wisely or not. Railway managements will have no part in making any advances in rates that they may deem necessary excepting that of petitioning the Interstate Commerce Commission for them and presenting the reasons why they believe they should be made. The Commission, a government body, will decide whether any advances shall be made and, if so, how large they shall be. Is that actually private management?

In other words, partly with and partly without the sanction of law the government will largely determine what changes shall be made in almost two-thirds of railway operating expenses, and also what changes, if any, shall be made in rates to cover the increases in operating expenses due to advances in wages and other causes. Do we actually have private management when government determines the rates that produce 100 per cent of railway earnings, and also in large measure, or even mainly, determines the wages and working conditions that are responsible for almost two-thirds of operating expenses?

Freedom—to Make Retrenchments

The present ostensible managements are still free to make what are called "economies", but what actually under present conditions are retrenchments, by laying off employees and curtailing purchases of equipment and materials. It used to be said they were free to declare dividends, but this is no longer true of the managements of most railways, because most of them are not earning enough to pay any dividends. The effects of laying off employees and reducing buying under present conditions are unmitigatedly bad for the railways themselves, the employees laid off, the manufacturing companies and their employees that are deprived of business and work, and the public. The railways have not had any employees that they have not actually needed. Therefore, when they now lay off employees they forego or postpone work that actually needs to be done. Reduction of their purchases prevents them from getting equipment and materials that they need and deprives the manufacturing industry of business that it needs and curtails its employment. All of these effects obviously are bad for the public.

And how about the advances in rates being necessitated? There is no question whatever that the present and prospective condition of the railways demands a substantial advance in rates. Because necessary to enable the railways to carry on, it will be desirable from the standpoint of the public. To the extent, however, that it will be necessitated by advances in wages not economically warranted under present conditions, it will be injurious to the public.

Advantages of Government Management

For the first time in the history of such conferences the five transportation brotherhoods entered the recent conferences with the Carriers' Conference Committee armed with a strike vote. President Roosevelt on two or three occasions recently, in approving the affiliation of government employees with labor unions, has said definitely that government employees should not be allowed to strike. If the government maintained that attitude it would be, from the standpoint of the public, one advantage of complete government railway management. Perhaps under complete government management all the advances in wages recently sought would have been made; but, if so, it is not conceivable they would have resulted immediately in the reductions of railway employment and buying that are now occurring.

Decreased Employment and Purchases

The government management might or might not be required to petition the Interstate Commerce Commission for advances in rates. Perhaps it would be empowered to fix rates as it might see fit. If, however, it accorded working conditions and wages to employees that were excessively expensive, it could at least maintain needed employment and buying and pass the deficit incurred along to the taxpayers. Under either ostensible private management or government management the public must, directly or indirectly, pay railway wages. It may bear the burden, if wages are made excessive, in the form of impairment or reduction of service, or reduced employment, or reduced railway purchases, or higher rates, or increased taxes. The important question is in what form it can best afford to bear them. It is by no means certain, that, when wages are advanced too much in proportion to earnings, the best way for the increased burden to be passed

along to the public is the form of curtailed employment and buying.

Need of Real Private Management

From the standpoint of public interest the best railway management would be private management which in the main was free from government dictation with regard to all those matters as respects which it is ordinarily assumed that under the system of capitalism the management of any industry should be free. It should be as free as railway employees to use its own judgment in negotiations regarding working conditions and wages, and as free, if agreements cannot be reached, to fight a strike as employees are to strike. It should have free initiative in fixing the rates necessary to securing adequate earnings; and it should be recognized that adequate earnings are earnings sufficient to enable management to give all the employment and do all the buying necessary to enabling it to render adequate, good and improving service. The managements of the railways of this country for years, however, have had virtually no freedom in fixing their rates. They have had a large measure of freedom to negotiate with their employees in accordance with their best judgment; but recent developments show that they are losing this. There has been no change in the Railway Labor Act; but in the recent wage negotiations the managements have had a new fear of government that has been a potent influence.

If the people of the United States really prefer private management of railways they should show that they want real private management. They do not have real private management under a system under which the ostensible managements not only lack power to fix rates, but also feel that they are not free from direct or indirect government pressure in regard to wages and working conditions. A system is radically unsound which, under such railroad and general economic conditions as now exist, makes it necessary for most railways to resort to drastic retrenchments in employment and buying in order to pay advances in wages.

Courage

Seventy-one years ago, directors of a small railroad in the South met to consider the affairs of their company. The road had just been returned to them by the United States government, after nearly four years of hard wartime usage. It was, in the language of the report made to the directors, ". . . in deplorable condition . . . without rolling stock except the meager supply saved from the ravages of war . . . without machine shops or machinery, the road in bad order, the bridges worn out and unsafe, station houses destroyed or unfit for use, without . . . a chair or table, or a sheet of paper that the company could call its own, and, worse than all, without a dollar in the treasury to commence operations." There were $700,000 in pressing floating debts, principally for interest on bonds held in the North on which no payments could be made during the Civil War.

In that desperate state of affairs, "the directorate . . . thought it best to go to work and earn the money" to meet the company's obligations. They did it, too, and rehabilitated the road.

Those directors were just businessmen, not heroes, but what they did required more than mere business acumen and resourcefulness. It required courage—and courage of a particularly unspectacular and difficult sort—the day-by-day commercial courage of those who venture in business, and, so venturing, multiply and improve the things and the services which American people enjoy.

Fortunately for this country and its people, commercial courage of that sort is not rare. Perhaps it is because it is so common that it is rarely noted and not often appreciated for what it is. The case of the war-wrecked railroad of Civil War times in the South was but an extreme example of the same sort of thing that goes on all the time in all forms of productive enterprise. Commercial courage makes American enterprise go forward. It has conquered frontiers, not only physical frontiers of what was once a wilderness, but frontiers of doubt and hesitation and fear in the launching of ventures, the development of products, the upbuilding of our unparalleled standard of living.

Perhaps it is because we are all so accustomed to think of courage as a virtue reserved for war, for thrilling rescues, or daring encounters, that we fail to note and emphasize the quality of courage in the farmer who each year risks his labor and his capital in the venture of production on lands which may be stripped by wind, drowned by flood, baked by sun, or ravaged by insects. To do that with success takes skill and judgment, of course, but it takes courage too.

To engage in what is commonly known as "business" requires courage no less—for there is no more certainty of gain in industry than in agriculture. At every step of the way, in financing, in production, in distribution, in selling, there are obstacles to be met and risks to be run. Success demands knowledge and foresight, of course, but it demands, too, the stout-hearted courage that, seeing the risks, is yet willing to back the judgment that the enterprise in hand, whatever it may be, can be done.

The things done may not all be great things; they may not be done the best way. In fact, after the event, gifted second-guessers usually can show how they might have been done better. But the doing of them took courage, and courage of the sort that, in spite of the "depression psychology" which talented alarmists have described, remains a common American characteristic.

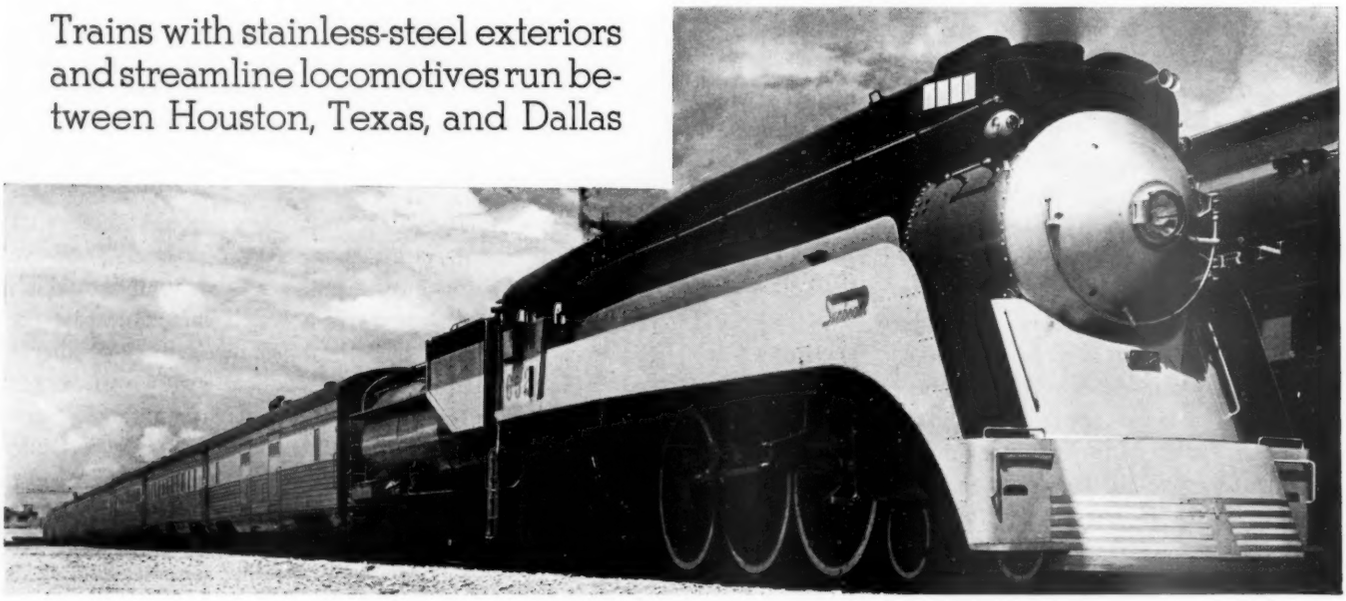
Multitudes of Americans have shown it through this, as through other depressions. It was shown in the brave fight of families to keep homes together in the face of difficulties; in the determination with which business enterprises met the challenge by bettering their products and their services, by risking money on improvements to enable them to do the job better.

Let me close with just one concrete instance of this sort of commercial courage. The instance is taken from the business I know best, railroading, but like examples are to be found in almost every line of endeavor. When you see an air-conditioned railroad express train flash by, swifter, safer, more comfortable than ever before, don't consider it as just a train. Think of it as part of the answer of American commercial courage to the challenge of depression and difficulty.

A "Guest Editorial" in the American Magazine by President J. J. Pelley of the A.A.R.

Southern Pacific Streamliners

Trains with stainless-steel exteriors and streamline locomotives run between Houston, Texas, and Dallas



One of the Twin S. P. Sunbeam Streamliners Designed for Service in Texas

THE first high-speed, steam-powered, streamline passenger trains designed and built especially for service in Texas have been completed and were placed in operation on Southern Pacific Lines between Houston and Dallas, Tex., on September 19, as announced in the *Railway Age* issue of September 18, page 386. The equipment required for the twin Sunbeam trains which operate, one northbound and one southbound daily, consists of two streamlined locomotives especially designed and rebuilt for this service at the Houston shops of the Southern Pacific and 16 new stainless-steel-sheathed cars, built by the Pullman-Standard Car Manufacturing Company. Each train will consist of one locomotive and eight cars; including one chair car for colored patrons, four chair cars, built in articulated pairs, one parlor car, and one diner-lounge.

Exterior View Showing Sheathing and Retractible Step Details

The Pacific type streamlined locomotives are equipped with Boxpok driving wheels, 77 in. in diameter, and are cross counterbalanced to assure satisfactory operation at speeds up to 100 miles an hour. They develop a tractive force of 40,570 lb., and have a total weight of 558,000 lb. Other features include lightweight pistons, valves and motion parts, all modern fuel economy devices, speed recorder with cut-off indicator, multiple bearing cross-heads and radial buffer. The engine and trailer trucks are of the constant-resistance type to assure safe and easy operation on curves at high speed. A pleasing, but persuasive, dual-tone air whistle is provided to augment the conventional six-chime steam-whistle.

In outer appearance these streamlined locomotives are strikingly different from other engines. Painted orange, red and black in unbroken horizontal lines, they appropriately harmonize with the color scheme of the car equipment of the trains. A broad orange line starts at the pilot and curves up along the skirt of the running board to a straight line. On each side of the orange are stripes of red. The rest of the locomotive painting, including running gear, is black. All vertical handrails are cadmium plated.

The arrangement and appearance of the upper part of the new streamline engines are distinctive. Conspicuously absent is the irregular top line presented by the smoke stack, sand dome, steam dome and whistle, characteristic of the older locomotives; these parts are covered by a smooth casing which completely shrouds the top of the boiler. A conical smoke-box front, steel-plate pilot and frontal enclosure give the locomotive a trim and attractive appearance.

Principal Features of the Car Equipment

The car equipment for the new trains embodies the latest ideas and refinements in streamlined passenger

train car design. The center of gravity of the cars is 9½ in. lower and the interior width 5¼ in. greater than the conventional type of passenger cars, a development made for the purpose of improving riding quality, comfort and safety in high-speed operation.

All car frames are fabricated of Cor-ten steel, having a tensile strength of 75,000 lb. per sq. in. The sheathing is of stainless steel with a tensile strength of 110,000 lb. per sq. in., which is about double that of ordinary carbon steel. The entire structure of each car is assembled by the electric welding process. Aluminum is extensively used for trim and decorative purposes. By the use of modern materials and methods, these cars are said to weigh one-third less than conventional cars of the same capacity. The entire train, with locomotive and tender, weighs 1,344,000 lb. and is 673 ft. in length. Each train has 280 salable seats, excluding seating space in the diner-lounge car.

Among structural features of interest are the car trucks, utilizing triple bolsters and special spring suspensions to effect improved rideability. The axles are made of heat-treated steel, and each journal is equipped with the pad-type journal lubricator developed on the Southern Pacific. Titelock couplers, combined with rubber draft-gear members, reduce usual slack between cars to a minimum, eliminate noise and improve riding qualities.

Streamlining extends from the headlight and pilot of the locomotive to the attractively-curved end of the last car on each train. This striking appearance is augmented by reason of the attractive exterior color scheme employed. The orange stripe which starts at the front locomotive bumper beam curves upward and expands into a broad band extending horizontally the full length of the train. Above and below this band are red stripes, the striping completely covering the sides of the cars. The car roofs are finished in black, as are the lower skirtings which curve under the cars.

Rubber diaphragms, painted to conform with the exterior color scheme, cover the gap between the cars to provide an unbroken exterior surface the full length of the train. The car steps are retractible and when in lifted position conform to the contour of the curved skirting of the cars.

The windows of all passenger cars are exceptionally wide, with double glass, plate type on the outside, sealed against dust, and safety type on the inside. The seats in chair cars rest on frames of light-weight stainless steel tubing, and are deeply cushioned in sponge rubber. Being of the rotating-reclining type, they are easily adjustable to suit the comfort and convenience of the passenger. Chairs in smoking rooms, parlor cars and diner-lounge are of aluminum framing, and also are deeply cushioned in sponge rubber. Parlor-car chairs are of the rotating type with attractive upholstery.

Interior View of Sunbeam Observation Lounge Room

Sunbeam Dining Section Decoration and Equipment Set-Up Ready for Service

The car interiors feature a striking combination of creams, Nantes blue, light tan, brown, coral, orange terra-cotta, smoke gray, jade green, ivory, henna apricot, yellow and rust. Seat coverings are of curly mohair, varied in harmony with the car color schemes. Prominent interior features include mirrors, satin-finish aluminum mouldings and partitions and doors of aluminum and glass or plymetal. Sound-deadening insulation is provided in walls, roof and floors of all cars, the latter being laid with pressed cork.

Weights and Dimensions of the "Sunbeam" Cars

No. of body units per train	Kind	Seating capacity	Light weight of cars, lb.	Length of cars
1	Baggage	..	103,400	79 ft. 2 in.
1	Coach	48	103,430	79 ft. 2 in.
4	Coach-Articulated	50	89,830	66 ft. 1 in.
1	Parlor	32	102,460	79 ft. 2 in.
1	Diner-Lounge	46	117,000	79 ft. 2 in.
	Total train car length		581 ft.	
	Total train length with locomotive		672 ft. 9¾ in.	
	Total train car weight		785,610 lb.	
	Total seating capacity		326	

All passenger-carrying cars are completely air-conditioned. Cooling is provided by the steam-ejector system. Car heating is provided by a thermostat-controlled overhead heating coil, which tempers the incoming fresh air during cold weather, and thermostat-controlled floor heating system. Air ducts and outlets are concealed above the indirect lighting structure, running lengthwise of the cars at the center of the ceiling.

Secondary ceiling lighting is afforded by a series of lights located in reflecting troughs, these being wired in series-parallel arrangement to provide for desired dimming. For primary illumination, individually controlled, directional, ray-type lights with focusing lenses are located in the lower part of the baggage racks directly over each seat.

Special storage compartments for hand baggage are provided in the vestibule end of each of the chair cars, and in parlor cars where gabardine curtains conceal the luggage from view. Ladies' lounges and men's smoking rooms are spacious and attractively finished in keeping with the rest of the train.

Radio reception is provided throughout the train, with

the exception of the diner section of the diner-lounge. Radio chasses are located in special built-in compartments in four of the cars, with speakers located in one end of each chair car, parlor car and lounge section of the diner-lounge. Each speaker has a volume control located near by so that volume in each car can be individually controlled. Radio train-line connectors are provided so that speakers in up to four cars may be operated from one radio set in emergency.

The diner-lounge car has convenient seating accommodations for 32 diners and 14 passengers in the lounge section. The latter is furnished with especially selected movable chairs advantageously located in the oval observation end of the car.

Low-Alloy Steel for Car Construction

THE Bethlehem Steel Corporation, Bethlehem, Pa., recently announced that it has developed a low-alloy steel for use in the construction of transportation equipment. This steel, designated as Mayari R (the letter R denoting rust resistance), has a composition which was selected to produce a steel having (1) a strength appreciably in excess of ordinary structural steel, (2) good hot- and cold-working properties, (3) good welding characteristics, (4) little tendency to harden on rapid cooling and (5) great resistance to atmospheric corrosion. To attain such a combination of properties, the carbon content of Mayari R has been fixed at approximately 0.10 per cent, and the desired strength and corrosion resistance are obtained by addition of nickel, chromium, manganese, silicon, copper and phosphorus.

In order to investigate the merits of the steel, open-hearth heats were made with a variety of products to determine the ease of fabricating and the properties of the fabricated products. The analyses of two of the heats, designated as Nos. 1 and 2, are given in Table I. Sheared plates of various standard thicknesses were rolled from the two steels. The slabs were heated to the temperature usually employed for soft steel, and no difficulties were encountered in the rolling. Tensile properties, Brinell hardness, and bent-test results for the plates are given in Table II.

Structural members of Mayari R steel were rolled without difficulty. The physical properties on an I-beam section rolled from steel No. 2 had a yield point of 54,600 lb. per sq. in., a tensile strength of 67,500 lb. per sq. in., an elongation in 8 in. of 26.2 per cent and a reduction of area of 57 per cent. Endurance tests made in the R. R. Moore machine on specimens taken from rivet bars gave an endurance limit of 49,200 lb. per sq. in. as determined by 10,000,000 cycles; with a tensile strength of 75,200 lb. per sq. in., this gives an endurance ratio of 0.66. Results of air-hardening tests on ¾-in. rivet rods indicate that Mayari R steel has little tendency to air harden even when air cooled from 1,870 deg. F. Although Mayari R steel cannot be formed and drawn as drastically as a dead soft steel, no serious difficulties have been encountered in fabrication. It can be worked hot and cold, and welds satisfactorily without it hardening.

Roof of Mayari R Steel Being Constructed for a Lightweight Passenger Car

Table I—Chemical Analyses of Two Heats of Mayari R Steel

Heat No.		C	Mn	P	S	Si	Ni	Cr	Cu
1[a]	.....	0.08	0.45	0.099	0.035	0.10	0.34	0.25	0.50
2[b]	.....	0.08	0.72	0.100	0.042	0.40	0.33	0.56	0.62

[a] Composition suitable for thin plates, sheets and rivets. Blooms are first rolled into sheet bars and then into sheets of various gages.
[b] Composition suitable for heavy plates, bars and structural members.

Atmospheric exposure tests of several years duration, made in industrial atmospheres at widely separated localities during the developmental stage of the steel, have all shown that the corrosion resistance of Mayari R steel varies somewhat in the different localities; this makes it impossible to say the latter steel is exactly a certain number of times as corrosion-resistant as ordinary steel. However, all tests are said to show that the corrosion resistance of Mayari R steel is superior to that of copper-bearing steel. In services where the life of copper-bearing steel would be twice that of ordinary steel, the manufacturer assumes that the life of Mayari R steel would be fully two or three times that of copper-bearing steel or of the order of six times that of a plain steel.

Table II—Physical Properties of Plates Rolled From Mayari R Steel

Heat No.	Plate thickness, in.	Yield point, lb. per sq. in.	Tensile, stress, lb. per sq. in.	Elongation in 8 in., per cent	Reduction of area, per cent	Brinell hardness	Bend
1[a]	3/16	57,600	71,900	28.0	66.3	137	Flat
	¼	52,350	68,600	30.0	61.4	131	Flat
2[b]	3/16	63,000	81,900	20.0	62.9	163	Flat
	¼	66,200	81,900	28.0	64.7	156	Flat
	⅜	58,200	78,400	28.0	57.4	156	Flat
	⅜	54,900	78,400	25.5	60.6	152	Flat
	½	54,900	78,400	25.5	60.6	152	Flat
	¾	50,000	75,200	30.0	52.1	167	Flat

[a] Izod impact resistances of longitudinal specimens from ½-in. plate were 82 and 81 ft.-lb. in the as-rolled and normalized conditions, respectively.
[b] Izod impact resistances of longitudinal specimens from ½-in. plate were 80 and 87 ft.-lb. in the as-rolled and normalized conditions, respectively.

Mayari R steel can be welded by any of the various processes, such as the electrical resistance method and by all of the fusion methods. However, like plain carbon steels, consideration should always be given to the preferred welding procedure which depends upon materials, designs, and the qualities desired in the welded joint for a particular service. Some of the important precautions in the welding of carbon steels also apply to Mayari R steel. It may be welded with mild-steel electrodes, and also by adding reinforcements to the welds in cases where base-metal strength is essential. A large number of high-strength electrodes are also available for the low-alloy steels, which deposit weld metal of high strength.

Jeffers Succeeds Gray as Head of Union Pacific

Retiring president, after 17 years in this capacity, became vice-chairman of the board on October 1

CARL R. Gray, president of the Union Pacific for the last 17 years, retired from this position on October 1, three days after he became 70 years of age, the retirement age under the company's rules. Mr. Gray insisted that no exception be made in his case, but he will continue in the service of the company as vice-chairman of the board of directors with headquarters at New York.

William M. Jeffers

Carl R. Gray

William M. Jeffers, executive vice-president, has been elevated to the presidency of the 10,000-mile system to succeed Mr. Gray, and also becomes a member of the board of directors. As before, Mr. Jeffers' offices will be located at Omaha.

In the capacity of vice-chairman of the board Mr. Gray will have supervision over matters which affect the public policies and problems of the company and the railroad industry in general. He will continue as a member of the board of directors and of the executive committee.

Mr. Gray has given 54 years of continuous active service to the railroad industry, during which he achieved nation-wide prominence as the efficient, progressive and socially-minded head of one of the country's largest railroad enterprises. Attaining his early experience in the ranks, he soon began the upward climb which brought him to the presidencies of three lines—the Spokane, Portland & Seattle (1911), the Great Northern (1912-1914), and the Western Maryland (1914-1918)—before he assumed executive direction of the Union Pacific in 1920.

It was during the war that Mr. Gray, while serving as Director of Operation of the United States Railroad Administration under the director general of railroads, came into close contact with the late Judge Robert S. Lovett, prominent figure in the Harriman organization, who was also devoting his energies to government service during the war. So impressed was Judge Lovett by the ability displayed by Mr. Gray that, when he gave up the presidency of the Union Pacific in March, 1920, to take the chairmanship of the board, he was instrumental in having Mr. Gray elected as his successor.

An efficiently managed, soundly-financed and dividend-paying carrier ever since its rehabilitation by E. H. Harriman, the Union Pacific attained new heights of prosperity under the guidance of Mr. Gray. Today it is still one of the strongest and most aggressive railways in the

country, and one of the few that showed earnings on common stock during every year of the depression and that was able to continue the payment of common stock dividends throughout this period.

Soon after Mr. Gray took over direction of its activities certain trends in the affairs of the Union Pacific became evident which reflected clearly the influence of skillful management. Its operating ratio declined steadily from 72.5 in 1921 to 67.6 in 1929, and established a post-war low at 67.2 in 1933. Similarly its funded debt has been subjected to a process of steady reduction, having declined from a high of $415,732,450 in 1924 to $342,304,800 (exclusive of the St. Joseph & Grand Island) in 1936, reflected in a reduction in annual interest charges from $17,855,927 in 1924 to $14,437,163 in 1936, all of which has been accomplished without appreciable change in the amount of stock outstanding.

As an example of the control which has been exercised over expenses, the trend of net earnings during the depression years may be cited. In 1929 the operating revenues of the company attained the all-time high of $217,356,593 and net income totaled $49,256,042, also an all-time high. As on other roads, operating revenues declined precipitously during the ensuing years, reaching a low of $111,090,459 in 1933, but so well were expenses held in hand that a net income of $21,578,196 was earned in that year, which was more than sufficient to cover the $6 dividend that was paid on the common stock.

During Mr. Gray's regime the Union Pacific has maintained a consistently aggressive attitude in dealing with problems presented by changes in the economic and transportation pictures. It was one of the first carriers to appraise the consequences of increasing highway competition, and as early as 1925 was substituting highway for train service on branch lines. By 1929 it was operating motor coaches over 7,000 miles of highways.

Similarly, it has pioneered in the introduction and perfection of high-speed, light-weight, streamlined Diesel-electric train service, in the application of air-conditioning to railroad passenger equipment, and in introducing innovations in passenger service such as those embodied in the Challenger trains. It has, moreover, been in the vanguard of those carriers that have sought to increase passenger business by stimulating travel to vacation centers. Efforts along this line include the development, through the Utah Parks Company, a wholly-owned subsidiary, of tourist facilities at national parks in Utah and, more recently, the construction of Sun Valley Lodge in Idaho.

That he has been privileged to head a carrier whose sound financial condition has made possible extensive experimentation and pioneering with innovations in services and equipment has been the source of a great deal of personal satisfaction to Mr. Gray, and he has stated so in private conversations. Particularly proud is he of the fact that the innovations incorporated in the "Challenger" trains originated altogether on the Union Pacific. Also a source of much satisfaction to him has been the excellent on-time performance of Union Pacific freight trains.

Under his direction the Union Pacific has maintained its properties in excellent condition, has been active in the building of new lines into undeveloped agricultural and timber lands, and, on the other hand, has not hesitated to abandon unprofitable branch lines. Refinements in organization have been made from time to time as opportunities for reducing expenses became apparent. Among the more recent of these was the unification last year of the four principal components of the system—namely, the Union Pacific Railroad, the Oregon Short Line, the Los Angeles & Salt Lake, and the Oregon-Washington Railroad & Navigation Company—thus making possible the centralization at Omaha of all accounting and treasury work and the discontinuance of the separate accounting and treasury departments.

Throughout his career Mr. Gray has maintained a keen interest in the broader aspects of transportation and in business in general. Previous to the formation of the Association of American Railroads he was active in the affairs of the American Railway Association and of the Association of Railway Executives. He is now a member of the board of directors and of the executive committee of the A.A.R. He is also a director of the Railway Express Agency and for five years was a director of the Chamber of Commerce of the United States.

Mr. Jeffers has been identified with the Union Pacific for nearly 47 years. During the last 17 years he has been closely associated with Mr. Gray in the management of the property, first as general manager, then as operating vice-president and finally as executive vice-president. Thus, he advances to the presidency with a broad knowledge of the property born of long experience, with a high reputation as an operating and executive officer and with an understanding of the policies that have enhanced the favorable position of the railroad.

In the years during which he has exercised an important influence in determining the policies of the Union Pacific Mr. Jeffers has made many constructive contributions to certain outstanding achievements for which that carrier is noted. To his sympathy toward a definite and intensive safety program and to his own ideas on the subject can be attributed much of the credit for the fact that the Union Pacific has been a frequent winner, in competition with other Class I roads, of the E. H. Harriman memorial award given by the American Museum of Safety and of the annual award made by the National Safety Council. To him is given credit for many of the service innovations incorporated in the Challenger trains, such as low-cost dining car meals, registered nurse-stewardesses, free porter service, free pillows and exclusive cars for women and children.

A prodigious worker himself, Mr. Jeffers is a strict disciplinarian, but at the same time commands the high-respect and good will of the railroad's employees, thousands of whom he knows by their first names. "I am today as much a working man as any of them," he says. To his capacity for work he largely attributes his rise on the Union Pacific. Starting as an office boy at 14, he was chief dispatcher at 24, trainmaster at 29, division superintendent at 35 and general manager at 40.

Carl Raymond Gray was born on September 28, 1867, at Princeton, Ark., and was educated at the University of Arkansas. He entered railway service as a telegraph operator for the St. Louis-San Francisco in March, 1883, and served that company successively as station agent, chief clerk to the general western agent, commercial agent, division freight agent, division superintendent, superintendent of transportation, general manager, operating vice-president and senior vice-president until April 30, 1911. In 1904, while serving as general manager of the Frisco, Mr. Gray's jurisdiction was extended also over the Chicago & Eastern Illinois. In 1911 he left the Frisco to become president of the Spokane, Portland & Seattle and the Oregon Electric, resigning in the following year to become president of the Great Northern. After two years as head of this company he resigned to become president of the Western Maryland, which position he held until 1918. During 1917 and 1918 he also served as chairman of the board of the Wheeling & Lake Erie. During federal control he served as Director of Operation of the United States Railroad Administration. In January, 1919, he returned to his former positions with

the Western Maryland and the Wheeling & Lake Erie, holding these until January 1, 1920, when he became president of the Union Pacific.

William Martin Jeffers was born on January 2, 1876, at North Platte, Neb., and first entered railway service with the Union Pacific on June 1, 1890, as an office boy. During the years immediately ensuing he served as a telegrapher and clerk in the maintenance of way department. In 1898 he was advanced to train dispatcher and two years later he was further promoted to chief dispatcher.

After five years in the latter capacity Mr. Jeffers was made trainmaster, and from November, 1908, to February, 1915, he served successively as assistant superintendent of the Utah division and as superintendent of the Wyoming and Nebraska divisions. At the end of this period he became general superintendent and in June, 1916, he was advanced to general manager of the Union Pacific Railroad. For three years during the war period Mr. Jeffers had the title of vice-president, returning to the post of general manager when the roads were returned to private control.

On October 1, 1928, he was elected vice-president in charge of operation of the system, and on October 1, 1932, the board of directors created the new post of executive vice-president for him. He was holding this title at the time of his election to the presidency.

Rough Handling to Go Under the Microscope

A STUDY of the rough handling of cars on a national scale to reduce damage to equipment and lading was recommended at a meeting of more than 100 superintendents, yardmasters and claim agents at Chicago on September 22. The meeting was sponsored by the Bureau of Explosives and the Freight Claim division of the Association of American Railroads. In accordance with this suggestion, attention will first be directed to the Chicago Terminal district where impact recorder tests were started in 1929 by the Committee of Co-ordination of Chicago Terminals. This committee will appoint a sub-committee of operating men, including switchmen, and representatives of other departments to analyze the handling of cars in this territory and develop methods of handling them without damage. Later, efforts will be extended to other cities.

The matter of rough handling has been a subject of debate for some years and opinions as to the causes and extent of damage are as numerous as the cases occurring. Some shippers, in order to justify freight claims, contend that if cars are handled gently enough damage to lading will not occur. The railroads have taken the position that if lading is packaged and loaded so as to withstand the minor shocks received by cars in their normal movement, damage will not occur. The latter position has been subject to criticism because of its failure to establish the severity at which impacts cause damage and should be designated rough handling.

At the Chicago meeting, many different opinions were expressed, but it was unanimously agreed that damage to equipment as a result of impacts is greater than the damage to the lading. During the discussion of the question, "Can rough handling be eliminated or has it become a permanent fixture?" much blame was placed upon the fast freight schedules now in effect. One officer contended that in the speeding up of service, much of the time saved resulted from a cutting of terminal time rather than from a speeding up of train movement. Consequently, with limited time allowed for terminal operations, fast switching must be employed and careful handling of cars sacrificed. Another operating officer asserted that as long as switching operations are keyed to the point where one car leaves the lead every 21 seconds, as in the Chicago yards, the rough handling problem cannot be solved.

Opposed to these views were others which indicated that results can be accomplished. A yardmaster insisted that with the addition of only three assignments he could switch all cars to a stop without slowing down the present output of his yard. A claim agent in supporting the view that rough handling can be reduced, recommended that switchmen and other men on the ground be consulted to determine causes and develop solutions. To illustrate, he described a case in which officers failed to solve the cause of damage at a hump equipped with electric retarders until the advice of switchmen was sought. Their advice was to reduce the grade of the track beyond the retarder so that cars would not acquire excessive speed and deliver excessive impacts. With the aid of the engineering department, the grade was changed and damage eliminated.

Need For Adaptability

Another suggestion for improving switching was the selection of enginemen according to adaptability. Cases were cited wherein enginemen were unable to acquire the "feel" of switching or could not grasp the significance of careful handling. It was recommended that enginemen be given a course of instruction in switching and become proficient before expensive equipment and lading be entrusted to their care.

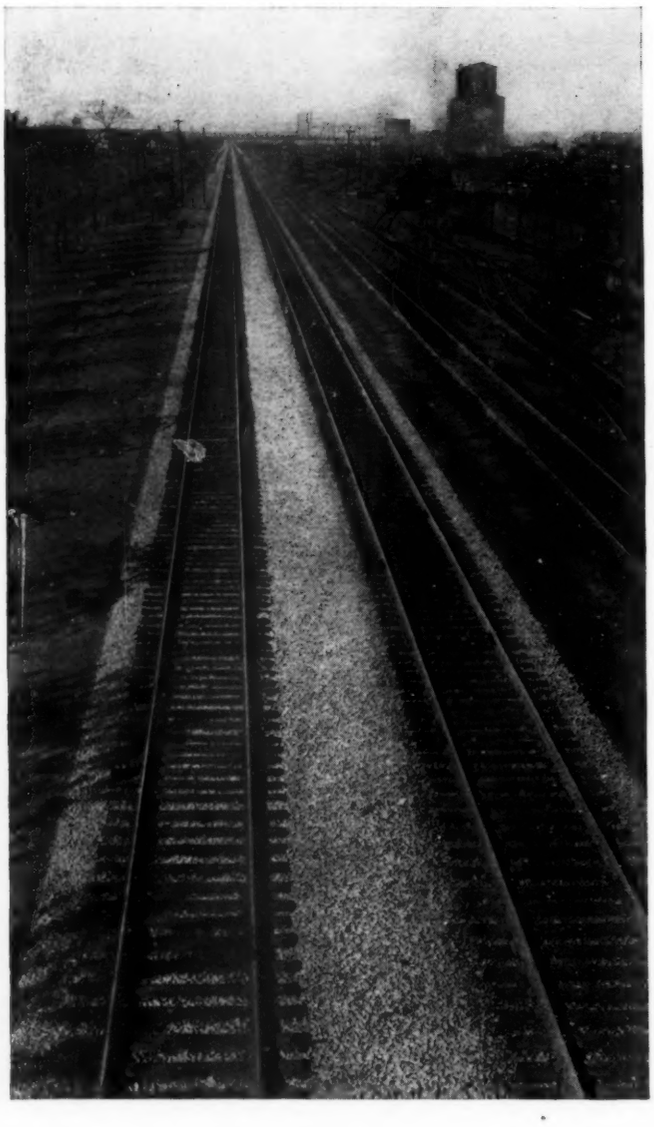
The meeting at Chicago was called because it was a strategic place to start a campaign against rough handling rather than because Chicago yards have the worst record. Even though the records of yards in other cities show more rough handling, the record of Chicago yards is significant as shown in a report of the Committee of Co-ordination of Chicago Terminals. It reveals that during July when impact recorders were placed in 712 cars, 29.7 per cent or 212 cars received heavy impacts, while during the first six months of the year when 4,393 cars were tested, only 17.1 per cent, or 754 cars received heavy impacts. Each of the 212 cars received an average of 2.15 heavy impacts. One car received 6 heavy impacts. A total of 51.9 per cent of the impacts had an intensity of 5 m.p.h.; 22 per cent, 6 m.p.h.; 11.7 per cent, 7 m.p.h.; 9.8 per cent, 8 m.p.h.; 3.7 per cent, 9 m.p.h.; and 0.9 per cent, 10 m.p.h.

To show the seriousness of rough handling, E. J. League, inspector of the Bureau for the Safe Transportation of Explosives and Other Dangerous Articles of the Association of American Railroads, cited several cases of rough handling of placarded cars. A carload of dynamite handled through one yard, he said, showed up with thirteen 50-lb. boxes broken. The test record of that yard showed 23 per cent of the tested cars roughly handled in the same month in which the shipment was handled. In the case of a placarded carload of matches discovered afire in an outlying yard, the first yard to handle it had a test record of 5 per cent rough handling, the second 23 per cent and the third 36 per cent. In another instance a placarded carload of acid used as military poison gas was handled so roughly that although it was in the strongest of steel drums, one drum sprung a leak and the car could not be approached for 48 hours.

Roadmasters Meet at Chicago

Abstracts of four papers presented at the fifty-second annual convention of the association

Part II



A GENERAL account of the fifty-second annual convention of the Roadmasters and Maintenance of Way Association, which was held at Chicago on September 14-16, appeared in the *Railway Age* of September 25, together with the opening addresses and abstracts of the five committee reports that were presented. Other features of this convention, namely, four papers presented by railway officers appear in abstract below. These dealt with The Curing of Soft Spots, by A. A. Miller, engineer maintenance of way, Missouri Pacific, St. Louis, Mo.; The Roadmaster's Responsibility for Tie Life, by H. R. Duncan, superintendent of timber preservation, Chicago, Burlington & Quincy, Galesburg, Ill.; Building a Railroad for Today's Traffic, by H. S. Clarke, engineer maintenance of way, Delaware & Hudson, Albany, N. Y.; and The Relationship Between the Stores and Maintenance of Way Departments, by W. S. Morehead, general storekeeper, Illinois Central, Chicago.

The Roadmaster's Responsibility For Tie Life

By H. R. Duncan*

Mr. Duncan addressed his remarks primarily to the responsibilities of the trackman in obtaining the maximum life from ties, but in introducing the subject, he pointed to the enormous outlay made by the railroads for replacements, the economies effected by the use of treated ties and the importance of care in handling to insure that a return would be realized on the added cost of treatment. After explaining the causes of the failures and the distinction between mechanical destruction and decay, he called attention to the various rules for good practice in the handling and application of ties that are designed to avoid early deterioration. An abstract of this portion of his paper follows:

Some of the physically weaker woods, which may give satisfactory life in some types of track structure, are not strong enough to withstand the abuse to which they are subjected when thrown over the top of a coal car or across a rail or another tie. They may also be broken because the track is center bound. On some roads it is the plan to send out ties in advance of the time they are actually put into track, and experience has also shown very definitely that if these ties are placed in close piles, less checking occurs than if the ties are thrown out promiscuously along the right-of-way and allowed to remain there some months before installation.

Consider the Cost

The average cost of maintaining a treated tie in track is estimated at 10 or 12 cents per year or from $300 to $400 per mile per year. Therefore, it is quite important that tie renewals be carefully supervised. If the ties are being spotted in when renewals are being made and a tie is in condition to remain in track another year, giving due consideration to the condition of the ties adjacent to it, and it is decided to leave it in, 10 or 12 cents per year is saved. On the other hand, this is not true of renewals made when surfacing track, because the cost of disturbing the track to renew a tie a year after the track has been resurfaced would be much greater than the saving of 10 to 12 cents per tie.

Properly prebored ties usually have a considerably greater quantity of preservative under the rail and around the spike holes than do non-bored ties. Consequently infection and decay are retarded. It has also been shown that the holding power of a spike driven in a bored hole is greater than that of a spike driven in a non-bored tie.

Guard Against Injury

The most satisfactory method of adzing ties when relaying rail is to use power adzers, but unless extreme care is taken, more adzing is done than is necessary. After being adzed, ties should be painted with a liberal quantity of creosote. Too often the

* Superintendent of Treating Preservation, Chicago, Burlington & Quincy.

pressure for rapid progress in rail renewals results in the slighting of refinements that will result in prolonging tie life. However, by proper supervision, satisfactory results can be secured. For example, one railroad assigns an inspector from the treating organization to each rail relay gang who offers suggestions and assists the gang in avoiding unnecessary damage to the ties.

Spike holes should be reused or plugged with treated plugs, except that prebored holes into which spikes have not been driven should be left unplugged. The use of tie plates results in longer life of ties, and it is important that tie plates of adequate size be applied to all new ties when they are put into track. In case ties are damaged by derailments or dragging parts of equipment, they should be adzed with a sharp adze to remove the crushed fibers and a liberal quantity of creosote applied to the adzed surface. In locations where ash pans of locomotives are emptied, ties are frequently destroyed by fire. This damage can be reduced by covering the ties with sheet metal.

Many ties have been damaged by weed burners, unless followed with a sufficient number of men and adequate equipment to insure that all fires are extinguished after the weed burners are operated over the ties. The application of shims and braces to heaving track requires the driving of extra spikes in the ties at locations other than the prebored holes, with a resulting decrease in the life of ties. Whether the additional tie life would be sufficient to pay for the cost of correcting the condition which causes the heaving is something that the track forces must determine.

Discussion

In the discussion of this report, Mr. Duncan, answering a question, described gum wood as being the most "treacherous" of all the woods that the railroads use for crossties, explaining that the performance of creosoted gum ties in the track depends to a great extent on the care that is given them previous to treatment. Replying to other inquiries he described tests conducted on his road, which demonstrated that it cannot be proved definitely that weed burners have a damaging effect on the creosote in treated ties; contended that when ties are piled closely together there is less loss of lighter fractions of the creosote and that less checking occurs; and said that the use by his railroad of a 50-50 mixture by volume of creosote and petroleum for treating ties has proved economical and has resulted in a minimum of checking.

Relation Between Stores and Maintenance of Way Departments

By W. S. Morehead*

The furnishing of maintenance of way materials comes under three groups, namely, program material, special A.F.E. material, and standard material for current use. In supplying this material, we have found the following system of planning and ordering to be the most efficient:

Program material embraces new rail, crossties, switch ties, tie plates, rail anchors and rail fastenings for use with new rail, as well as treated bridge lumber. The above materials are ordered on estimates furnished by the engineering department, and purchases are so made as to take advantage of quantity prices. Purchase orders usually specify "to be delivered as called for." As a result, deliveries can be made in carload lots direct to the point of use and thus avoid duplicate handlings. In the event that ties and lumber become seasoned and it is necessary to treat them in advance of the time they are actually required for use, these materials are stored on treating plant yards until required and then shipped direct to the job.

Requisitions for the material of the second class are prepared from estimates of the engineers, divided as between stock items and special items. Those for special items are passed to the purchasing agent for purchase, and those for stock items to the storekeeper serving the territory on which the work to be performed is located. Material required in carload lots is ordered for shipment direct to the job; that required in less than carload lots is ordered shipped to the nearest store to be assembled with other stock material and shipped out as required.

The stock of standard materials for current use is maintained by the supply department. Orders for the replenishment of such stock are based on past consumption, as reflected by stock books maintained on these items, plus any knowledge the storekeeper can gather from contact with roadmasters, and others concerning contemplated work.

Should Attend Meetings

The storekeeper should welcome every opportunity to attend division meetings in person or have the stockkeeper who is assigned to maintenance of way materials attend such meetings. In addition, he or his assigned stockkeeper should confer with roadmasters, supervisors and foremen as to current or anticipated work. With knowledge thus obtained, coupled with the material performance, as reflected by his stock books, the storekeeper should be in position to order, redistribute or offer substitute materials, to the best advantage.

Improper substitutions are no doubt made at times but if made properly after a prior understanding with the officer who ordered the material, it may be possible to utilize obsolete or semi-obsolete material, which otherwise might become almost a complete loss to the railroad, and prevent a further outlay of cash for the purchase of additional material.

One of the hardest problems for the storekeeper is to dispose of obsolete and semi-obsolete material at the smallest possible loss to the railroad, and it behooves him to keep constantly on the alert to work off such items. We endeavor to keep a list of such items constantly before us and before the heads of departments using that particular class of material; hence the oft repeated query, "Can't we substitute?" You may ask: "Why have obsolete and semi-obsolete material on hand?" This is due to several contributing reasons, the chief of which are changes in plans, deferred work, errors in estimates, changes in standards, changes in machine models, and the retiring of equipment.

To avoid purchasing material for use on one division when there may be a surplus of like material on another division, a record of such surplus material should be maintained in the general storekeeper's office, and this surplus transferred rather than to pass a requisition to the purchasing agent for an additional purchase. This information can be supplied by having all storekeepers report surplus materials on hand at regular intervals. If such surplus reports are to be of any value, storekeepers originating them should contact the roadmasters or supervisors and come to an agreement on just what is surplus.

Pricing of Material

Inasmuch as it is the practice on many roads for roadmasters and supervisors to work on monthly allowances, the storekeeper can render a real service in keeping the users of material informed as to the costs of the various items used. On our road we have adopted the practice of stenciling the price directly on larger items of material shipped to the line of road; our shipping notices, which accompany material shipments, also carry the price of each item. Scrap credit is an important factor in exercising control of material expenditures. We therefore allow scrap credit on the larger items of scrap in the same month that the new material is applied. We encourage prompt shipment of miscellaneous scrap items, and credit is allowed for these immediately upon receipt at the receiving store.

When no special machinery is required and it is not necessary to stock new repair parts, our practice is to reclaim locally as many items of roadway material as is considered practicable. Reclaimable items requiring special machinery and the addition of new repair parts are sent to a central plant for reclamation. Such reclaimed items are shipped out on orders to the extent of the supply available before new items are furnished.

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Curing Soft Roadbeds

By A. A. Miller*

Most railroads have soft spots in their roadbeds, where it is necessary to apply an extraordinary amount of labor and ma-

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terial—generally ballast—to maintain the track in even fair line and surface. The condition to be overcome may be confined to an individual location, where the soft roadbed extends over a considerable stretch of track, it may consist of many of so-called short "soft spots"; or it may include both. These soft places in the roadbed occur both in cuts and on fills.

Probably the most common procedure employed by the railroads generally to correct such conditions has been to use drain tile in cuts and cross drains of several different types in embankments. Much of this work has given good results, but there has generally been some difficulty, particularly in cuts, in determining definitely the depth of the water pocket and in knowing that the installation positively met the condition and correct it. These methods involve more or less disturbance of the roadbed, so that in many cases it is quite a long time before it is sufficiently stabilized to permit the raising of slow orders; and while the settlement is taking place, a considerable number of man-hours are expended as a rule in picking up low places.

Low Cost Methods

For these reasons, it was natural that some quick, low-cost, effective methods of eliminating these roadbed liabilities should be sought. I shall describe, therefore, some of the methods applied on the Missouri Pacific lines for the correction of soft places and water pockets in the roadbed.

One method involves the driving of cull ties or other cheap sticks of timber. Ordinarily a stick of timber eight feet long is of sufficient length to go through the water pocket and embed itself two to three feet in the more solid material beneath. The ties should be driven at about the spacing of crossties and as close to the ends of the track ties as possible, and so that the tops of the ties are about at subgrade, or at the bottom of the ballast bed. It is essential to extend the driven ties about thirty feet beyond the ends of the water pocket to insure complete confinement of the pocket. In some places it has been found that the material below the water pocket is so hard or resistant that ties cannot be driven. In such locations the plan may be modified by driving light rail of 8 to 10-ft. lengths into and through the pocket at a spacing of about 10 ft., and placing against these rails a wall of 30-in. by 10-in. planks extending from the bottom of the pocket to subgrade.

This method of driving cull ties or short timbers may be used successfully on fills up to three and four feet in height. On such light fills, however, it is advisable to use timbers of the cross-section of ties but ranging from 8 to 12 ft. in length, depending upon the severity of the condition that is to be corrected. Immediately after the ties are driven and the track over the pocket has been surfaced, it is our experience that the track at that point becomes stabilized, and no more extraordinary applications of labor and material are required.

During the last six years, the Missouri Pacific has driven 928,000 cull ties in wet cuts and on low fills, and has effectively eliminated 132 track miles of "soft spots." As the driving is done on both sides of the track, this means that approximately 7,040 cull ties were used per mile. In a few cases on the low side of curves in cuts, driving on only one side is effective, but such cases are rare. Exclusive of transportation charges, these ties cost an average of 54.3 cents in place, divided as follows: Labor, $0.346; material, $0.186; and rental of equipment, $0.011. With the exception of 68,000 ties, which were driven by our own forces, all of the cull ties have been driven under contract.

Other Methods

The Missouri Pacific has also applied several other methods to correct soft places or water pockets in fills or embankments. Where the condition to be overcome covers a considerable distance and is the result of unstable material in the fill rather than a true water pocket, I favor the use of concrete or timber slabs to distribute the imposed weight over the roadbed. This method is more applicable where the height of the fill is greater than 25 ft. On some fills we have driven piles along each side of the roadbed and tied them together by various means. This method is used where the height of the embankment is 10 ft. but generally not more than 25 ft. I think that the failure of these methods to give the best and most lasting results in the past has been due to the fact that the piling were not fastened together and, further, that they were not driven deep enough into the original ground. The depth of penetration into the original ground on fills over 8 ft. should never be less than 10 ft. to get real results. On fills less than 10 ft. high it is not necessary to fasten the piling or poles together, but sufficient penetration into the original ground should be assured by providing sticks of adequate length.

During the last eight years, the Missouri Pacific has driven about 10,000 piles for the stabilizing of 50 miles of embankment. Whether cull ties, or timbers of that size, or timbers of the size of piling are to be used depends on the depth of the soft spots.

The concrete slab method was tested first about 2½ years ago on a stretch of track 110 ft. in length. The height of the fill was only 3 ft. but the depth of the pocket was at least 15 ft. The roadbed was very unstable, and the results obtained by this installation were such as to justify a test on a more extensive scale. Consequently, last November an installation was made on 2,600 ft. of track on a 9-ft. fill where the unsatisfactory condition of the roadbed was the result of a very unstable material in the fill rather than a true water pocket. The results of this installation have been highly satisfactory.

Some six months ago, a fill about 30 ft. high and 1,400 ft. long was treated in the same manner, except that wood was substituted for concrete. So far as we can determine, there had always been a slow order on the track on this fill, but immediately after the installation was made the slow order was lifted and normal speed has been permitted over the track. Untreated timber was used in this installation, as we did not know just what results we would obtain, but knowing now that this method is effective, we believe that treated timber should be used in carrying out this plan elsewhere.

I have not attempted to set up any detailed cost figures covering the methods shown, as the variables in rates of pay, transportation costs, rental of equipment, etc., give wide ranges in costs for different railroads and on different sections on the same railroad. On the Missouri Pacific this work has cost as little as $3.65 per track foot and as much as $6.

The question has been raised as to whether failures might occur due to the ties or piling decaying to such an extent as to lose their resistance to the pressure of the roadbed materials against them. If the job is properly done, all of the materials installed will be sealed in the roadbed material; in other words, none of the material used for correcting the condition will be exposed. Therefore, I think that it will be many years before failure would take place.

Discussion

In answer to questions concerning the probable effect of the decay of ties or piles driven to solidify track, Mr. Miller expressed his confidence in some permanent benefit. He declared, however, that this method of solidifying track was so much cheaper than any type of drainage—approximately one-third as expensive—that if it were effective for only six years it would still be the more economical method. The concrete slabs cost about $5 per track foot and the timber slabs about $4, he said, although the latter would necessarily cost more if built of treated wood. However, he added that the cost of such installations would vary greatly with local conditions.

Building a Railroad for Today's Traffic

By H. S. Clarke*

Today, we find it is absolutely necessary to provide a stronger and better track structure than was ever required before and, furthermore, owing to increases in rates of pay, taxes, and costs of material, and to decreased traffic, this improved structure must be maintained at approximately 50 per cent (or less) than what it cost the railroads, on the average, to maintain their tracks between 1920 and 1930. To meet this situation, far-reaching and

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radical improvements must be made in the standard of track construction.

Like most railroads, the Delaware & Hudson has been carrying on a program of improved drainage, ballasting with material of suitable type and to an adequate depth, installing hardwood creosoted ties, heavy rail, etc.; and has continued to carry on these programs on a somewhat reduced scale through the depression. Most railroads have been taking these same steps to modernize their permanent way. We have, however, been endeavoring to obtain still greater economies and thus meet the situation which required better track that could be maintained more economically. Some of the following points seemed most pertinent to the problem:

(1) While creosoted ties decrease the cost of renewals by preventing decay the treatment is expensive, and to secure full advantage of the investment the tie must be fully protected against wear and spike-killing.

(2) The rail joint is universally recognized as the weakest point in the track, and if a joint could be as strong as the unbroken section of the rail, or if joints could be eliminated entirely, the problem of track maintenance would be simplified.

(3) It is recognized that more than 45 per cent of the track labor is now consumed in keeping the rail joint in proper line and surface.

(4) More rails are renewed yearly and have their service life shortened by reason of battered and chipped ends than for any other cause, thus presenting one of the major problems in maintenance work.

(5) While new methods of hardening rail ends against batter and a process of reconstructing or building up rail ends has been developed, these improvements are only stop gaps and the full service life of the rail is far from being secured.

(6) If the rail joint could be eliminated and tougher rails could be developed through the use of alloys, they would give a longer service life against wear.

(7) The development of control-cooled rail eliminated many of the anticipated difficulties from tranverse fissures developing in rails.

To meet the first condition, a heavy double-shoulder tie plate was developed that is canted and crowned, and fastened to the tie by means of a compression screw spike, independent of the rail fastenings. Thus the tie plate became, in effect, a part of the tie and prevented wear of the tie. The screw spike provides sufficient lateral resistance, the double-shoulder plate maintaining the track to gage. In addition, high lateral forces act on the rail inwardly of the track as well as outwardly, and if the rail is held closely to place when the pull is inward by means of the shoulders, a decrease in the lateral force applied to the other rail will result and the side thrust will be divided more evenly between the two rails.

The fastening of the rails to the tie plate, it was felt, must meet certain conditions. Such fastenings must be able to be tightened strongly and remain tight in order to prevent the rails from creeping on the ties. They must have some elasticity in order to dampen the effect of the stresses developed in the track, and the movement of the tie in the ballast resulting from impact. It must be possible, at any time, even after a number of years, to tighten the fastening to take up wear, or renew part or all of the component parts. After many experiments with various types of clip fastenings, the spring clip fastenings now used were adopted and applied with the double-shoulder plate previously described, which was punched to take the fastenings.

With these fastenings, the rail is held by means of two spring steel clips bolted to the tie plate at the center of the crown and bearing on the base of the rail. Since the rail-to-tie-plate fastenings are independent of the tie-plate-to-tie fastenings, each group is free to perform only the work it is designed to do, while the rail, the tie plate and the tie are co-ordinated into one strong but elastic and flexible unit. The old destructive cut spike is eliminated, the double-shouldered plate holding the track to gage.

The fastening of the rail to the tie plate and through that to the tie by means of the spring steel clips greatly strengthens the track structure, yet leaves it sufficiently elastic to asborb the impacts and loads applied to it. The vertical motion of the rail and of the tie is decreased greatly as compared with that of the old cut spike, or cut-spike and screw-spike construction, although the normal wave motion of the rail is permitted to pass freely.

The pressure exerted by the spring clip permits the free wave motion of the rail, but does not allow it to progress longitudinally. The rail is held in place and there is no creepage. So well is the rail restrained that changes in length due to expansion and contraction are prevented. It was this feature of spring clip construction, combined with several other facts, that led to the belief that it was possible and practical to weld rails into lengths limited only by the necessity for insulated joints for signal circuits, and the location of switches and crossovers.

Cause of Creeping

The principal cause of creeping track is the wave motion of the rail which is set up by the moving trains. There is usually a slight upward and then a downward movement of the rail and ties just preceding a moving locomotive or train, owing to the flexibility of the rail.

Starting with the fact that there is a wave motion in the rail, it may be explained that if the rail were *continuous*, this wave would be propagated along it simply as an undulating motion. But by laying rail in lengths of 39 ft. or other short lengths, the propagation of the undulating motion is more or less arrested at every joint, and completely so where the angle bars are loose. Each length of rail is thus permitted to move ahead. Hence, the running or creeping of rail takes place successively by rail lengths, one rail at a time; or, at most, by a few lengths acting together as one. This is why steel may creep and not close the joints.

Now, if the rail were continuous as the load rolled forward, it would stretch out the rail behind and crowd it together in front, compressing the particles slightly, thus setting up behind an elastic force of tension and in front an elastic force of compression in the rail. Both of these forces would act to restore the disturbed portion to its former place after the load had passed; thus the rail would undulate with the ground.

With continuous rail, therefore, the tendency for rail to creep or run is avoided by the elimination of the track joint. This is borne out in practice, as experience with continuous rail over an extended period has not shown any tendency to run through the fastenings.

Stresses in Continuous Rail

Observations at various times and places on ordinary track with well-fitting joints have shown but small movements at the joints over a wide temperature range, indicating that large temperature stresses must be present in a great mileage of ordinary track. Creepage in ordinary track not properly anchored adds tremendously to these stresses. It is believed, therefore, that track laid with continuous rail and fixed, say, at a rail temperature of 90 deg. F., does not develop any more stresses in the rail than will be found in much of the ordinary track mileage, and less than in portions improperly anchored.

Experiments conducted some years ago with a 500-ft. length of rail developed that, over a range of temperature changes between minus 20 deg. F. and plus 20 deg. F., the length of the rail was unchangeable as between these limits, and no movement was observed, but above 20 deg. F. the rail was quite sensitive to temperature changes. This fact has a bearing on the ideal temperature for fixing or fastening continuous rail and limits the range of temperature changes that affect the rail in any climate.

Where rail is so fixed that it cannot expand into an extended position when heated and cannot move in any other way, as, for instance, by buckling, it must remain unaltered in length since external forces holding it are greater than the compressive stress set up by the temperature rise. Alternatively, if the rail cools below the temperature at which it is fixed, a tensile stress is created to be resisted by the influence that fixes the rail; that is, the rail is compelled to undergo the stresses set up by expansion of the metal without lengthwise extension and vice versa. These stresses are so far below the elastic limit of the rail itself that they can have no effect upon it and are, therefore, of no consideration in connection with the subject of continuous rail other than representing a force that tends to lengthen or shorten the rail.

These facts were tested out in continuous rail laid in Albany, N. Y., in 1933, the longest rail having a length of 2,750 ft. and

this rail has been in service four years without giving us any trouble. Further installations were made at Mechanicville, N. Y., in 1934, at Schenectady and Windsor in 1935, and at Comstock and Cohoes in 1936, while, this year, all new rail laid is being welded. At the end of this year, we will have 450,000 lin. ft. of welded rail in service, or approximately 45 track miles of continuous track.

This introduction of continuous rail brought up an important and exacting condition that had to be met—namely, a sound, high-quality weld. Extensive studies and research were carried out, relative to the many phases of welding theory and practice, in both Europe and the United States. Exhaustive tests made under different procedures, with the co-operation of expert consultants, have resulted in the development of satisfactory welds.

Test welds have been subjected continuously day and night to severe rolling load fatigue tests, following a similar procedure in the extensive rail investigations by the University of Illinois and considered the nearest approach to actual service conditions in track. Many other well-known rail tests were also made. Without going into any detail, I will say that the results were satisfactory and convincing to us.

[At this point Mr. Clarke described the Thermit pressure weld, and the electric flash weld, which were explained in detail in an article in *Railway Age* for September 4, page 300.]

Continuous track has many advantages over track laid with the standard length rails, some of these being as follows:

(1) Joint maintenance is eliminated, including the maintenance of bolts and angle bars, surfacing and lining.

(2) Rail life is increased; there is no joint batter; rail is relaid less frequently.

(3) Rail creepage is eliminated.

(4) Deterioration of the joint ties is eliminated and it is not necessary to space ties.

(5) The replacement of joint bars and the reconditioning rail ends are eliminated.

(6) Smoother riding is provided for passengers.

(7) Rolling stock maintenance is reduced; there is no shock at joints.

(8) Signal circuit bonding is eliminated.

(9) Less tractive power is required to haul trains over jointless track.

While it is a little early to make any reasonably accurate estimate of the reduction in maintenance expenditures resulting from continuous rail and spring clip construction, a substantial saving is already obvious. We have track of this type, put up several years ago, over which there is a fairly heavy traffic, on which no work has been done since and which is in as good line and surface as when originally put up. This track gives every indication of staying in good line and surface for many more years with little attention. Railroad men who have been studying continuous rail feel that this development opens up the possibility of securing far stronger, safer and better riding track with a reduction in future maintenance expenditures of 50 per cent or more, plus a now unascertainable saving in the maintenance of rolling stock.

Discussion

In answer to questions, Mr. Clarke said that failures occurred in seven welds in the first installation of butt-welded rail, but that none had occurred since and that there have been no transverse fissure failures in the welded rail. He said, also, that the installations embraced curves as sharp as seven degrees and that one of them embraced a succession of curves, including several reverse curves. Further questions elicited the fact that the raising of track in surfacing had not resulted in any difficulty in holding it in line. In general, he said, efforts are made to avoid high temperature stresses in the rail by confining the butt-welding operation to periods when the temperature is moderate, but that work on hot days is permissible if the rail is left free to run so that it may adjust its length to the drop in temperature during the night.

L. & N. Stages Broadcast from "Pan American"

BY popular demand, the broadcast of the "Pan American" of the Louisville & Nashville which was initiated on August 15, 1933, has increased in magnitude until its anniversary is now celebrated extensively each year. The anniversary on August 14, 1937, was an all-day broadcast from the moving train, in which 7 radio stations, more than 25 radio performers, 19 announcers, 15 passenger and several public officers and railroad employees participated.

On August 15, 1933, the Louisville & Nashville began a series of daily broadcasts to advertise the train. The sound of the train and its whistle were picked up each day by a microphone near the tracks adjacent to radio station WSM in Nashville, Tenn., and, with a one-minute announcement, were broadcasted from that station. The first anniversary of these daily broadcasts on August 15, 1934, which had received approval from points as far distant as Cuba, Canada and England, consisted of a special announcement calling attention to the fact that the broadcast was one year old.

In 1935, however, the anniversary broadcast experienced its first expansion and on this occasion the Pan American was stopped near the radio station and the broadcast was personified through interviews with the engineman and other members of the train crew. In 1936, the event was further expanded by a special one-half hour broadcast made from the train over WSM. It was featured by interviews with various passengers and the crew.

The broadcast of 1937, said to be the first of its kind on record, was made on August 14 and 15 from an especially created station, WBPA, as the train traveled from Cincinnati, Ohio, to New Orleans, La. The character of the program, the development of a moving broadcasting system, the precise timing of the train's movement and the co-ordination of the seven stations participating make the enterprise one of the most unusual broadcasts undertaken by a railroad.

Much Planning Required

The success of this venture was due in no small degree to the planning prior to the broadcast. Preliminary steps included the allocation of time to various stations, the securing of permission from the Federal Communications Commission, and the publicizing of the event. The Louisville & Nashville Employees' Magazine had direct supervision over the latter as well as other details of the broadcast. More than 25,000 announcements were distributed while 2,000 news releases were sent to newspapers and magazines. In addition, the company's institutional advertising mentioned the broadcast. In several instances, stories localizing the broadcast were sent from the train as it progressed. To make possible the broadcast from the train and the rebroadcast from the seven stations, a dining car was converted into a studio. In it were installed a short wave transmitter, a grand piano, chairs for the orchestra and performers and press facilities. The kitchen of the car was used as a power room, housing a motor driven generator which provided current for the transmitter. Besides the usual radio in the club lounge car, a radio was placed in the coach ahead of the studio. The cab of the locomotive was also wired for sound for the greater portion of the trip.

At the same time the seven radio stations adjusted their

(*Continued on page 457*)

Here's That Co-ordinator Again

"Posthumous" reports of sections of research and transportation service consider problems of short lines and thin-traffic branches

WASHINGTON, D. C.

TWO "posthumous" reports of former Co-ordinator Joseph B. Eastman's sections of research and of transportation service have just been published by the American Short Line Railroad Association. They deal in turn with short-line railroads and the problem of the thin traffic branch line—the former being the work of Dr. Charles S. Morgan, who was director of the section of research, and the latter that of Joseph L. White, who was co-director of the section of transportation service. Dr. Morgan was able to complete his report after the expiration of the co-ordinator's office on June 16, 1936, by the use of funds from the unexpended balance which the railroads left with Mr. Eastman and with some assistance which Dr. Morgan's staff furnished "without compensation and because of interest in the subject matter." These funds were, however, insufficient to permit publication of the report and thus Mr. Eastman accepted the Short Line Association's offer to assume the expense of reproduction and distribution. Likewise, this organization offered to publish Mr. White's report, because as Mr. Eastman puts it, the problems of its constituent lines "are similar to those of thin traffic branch lines of the larger systems."

In his foreword to the report on short lines Mr. Eastman expresses doubt that it "will be of very material help" to such roads, because "the character of their problems proved to be such that no very concrete suggestions can be offered for the improvement of their conditions, except along lines which have been and are being followed." The short lines, he adds, "are effectively organized, and their necessities are such that there is not much that they have overlooked that would be of help to them." He believes, however, that the report, which "assembles in compact form much pertinent data," will "in many ways be a useful document, not only to the short lines themselves, but also to the public authorities that have occasion to consider their needs."

Branch Labor Costs Need Exploring

Introducing the report on branch lines, the former co-ordinator notes that at the time of that office's expiration Mr. White had not completed his inquiry into the subject. He was, however, able to submit the present report, which Mr. Eastman calls "worthy of publication, because it outlines and at least partially explores a problem which is of much importance, not only to the railroads, but to the country." Continuing, Mr. Eastman calls attention to Mr. White's suggestion that operating results on thin-traffic branches might be improved by "a reasonable adjustment of existing labor agreements affecting these lines." While he is convinced that in this connection there is a problem, "which both the railroads and the labor organizations should face frankly," the former co-ordinator would want to hear both sides "before undertaking to agree or disagree with Mr. White." Mr. Eastman goes on to suggest that this subject "is worthy of exploration" and adds: "I am sanguine enough, as a result of talks I have had with the representatives of both management and men, to believe that such an exploration will yield positive results of value to all, if it is undertaken in the right way by joint endeavor of both of these interested parties."

Abstracts of the two reports follow:

Report on Short Line Railroads

This report, occupying 128 pages, includes six chapters, which, after the introduction and description of the short lines, consider in turn the importance of the short lines, their physical and financial condition, factors affecting their present condition and considerations relating to their future. In the latter connection, Dr. Morgan says in his letter of transmittal to Mr. Eastman, there are "favorable as well as unfavorable factors." He adds, however, that "in view of the variety of local conditions with which short lines have to cope and in the absence of field investigations, only a general discussion of remedial measures could be undertaken."

The term "short line" as used in the report embraces all line-haul and switching and terminal companies of classes II and III; at the close of 1935 there were about 451 of these, 196 in Class II and 255 in Class III. They then represented only about seven per cent of the country's railway mileage, yet, the report adds, "many of them individually are of considerable importance." The introduction continues to outline those provisions of the Transportation Act of 1920 which were designed to aid small roads, such as that giving the Interstate Commerce Commission control over abandonments, the consolidation provisions, recapture and loans to weak roads, and the broadening of the commission's authority over joint rates and through routes.

Many Abandonments Since 1920

A map reproduced in the report shows that there is a "relatively large number" of short line railroads in the Southern district, the Southwestern region, and in the coastal states generally. While construction of these short lines has extended over 100 years, a large part of the present mileage was built during the first two decades of the present century; and "considerably more than twice as much main-line track has been abandoned or otherwise disposed of by these presently existing carriers since 1920 as was abandoned or otherwise disposed of by them during the entire period prior thereto." Responses to the questionnaire with which data for the study were gathered indicate that slightly over half of the Class II and III line-haul mileage in operation in 1933 was constructed primarily to serve the general public. Lumber and coal industries account for the greater part of the remainder, while a few were built to serve other industries. Over two-thirds of the mileage of the switching and terminal companies was constructed to serve the general public.

A classification of short lines based on their owner-

ship and control was considered "of special importance" and is given in the report as follows: Industry, railroad, investment and independent. The determining factor in the separation is the ownership of control of the capital stock, the distinction between "investment" and "independent" being in that a road is classified in the former group when it is controlled "by particular banks or investment companies." In the industry group at the close of 1933 were 27.5 per cent of the line-haul roads and 22.2 per cent of their mileage; and 24 per cent of the switching and terminal companies and 20.2 per cent of their mileage. Railroads controlled 22.4 per cent of the line-haul companies and 34.1 per cent of their mileage; and 62.2 per cent of the switching and terminal companies and 69.1 per cent of their mileage. The investment group included only 4.2 per cent of the total mileage, while the independents operated 45.5 per cent of the line-haul mileage, and 8.8 per cent of that of switching and terminal companies. Of the industry-controlled roads 54 per cent were furnishing freight service only, as compared with 33 per cent in the railroad and independent groups.

Another "classification of importance" is based on the number of connections with other railroads. Half of the reporting short lines had a connection at one end, and on the average there were 2.5 connections per road; about 24 per cent of the Class II and III roads handle "bridge or overhead" traffic. In this connection statistics are produced to show that "Class II and Class III roads, considered individually, participated to a greater extent in interstate traffic in 1932 than in 1928."

Considering "Changes in Importance of Short Line Railroads" the report compares the 1935 situation with those of 1911, 1920 and 1929, but warns that the decline in Class II and III mileage "is not conclusive of the abandonment of lines of railroad operated in the public interest." It continues in this connection to point out that "some 167 carriers and 9,483 operated miles were acquired by class I carriers during the period 1911 to 1933;" of the 189 carriers operating 4,994 miles, which were abandoned during the same period, many "no longer served any public interest, as the purpose for which they had been constructed long since had disappeared."

Traffic Losses Greater Than on Large Roads

A consideration of traffic trends during the period from 1911 to 1935 revealed that as a group Class II and III roads have experienced greater losses in volume than Class I lines; also while the net book investment of the latter increased 22.33 per cent during the 1920-1929 period, the net book investment of the Class II and III lines declined 27.35 per cent and 28.48 per cent respectively. However, from 1932 to 1935, the Class II and III roads experienced "much greater increases in freight traffic and revenues than did Class I carriers;" but, as expenses increased somewhat more in proportion, net income per mile of road rose only 78 per cent in the Class II group and 58 per cent in Class III as compared with 106 per cent in Class I. In the case of switching and terminal companies net income is regarded as more significant than trends of revenues; and the course of net "has generally been favorable."

Composite financial statistics of 436 short lines are analyzed in the report's section dealing with this phase and the physical condition of the short lines. Between 1928 and 1933 investment in road and equipment decreased 2.8 per cent, substantially all of which occurred in the 122 companies in the industry group. Capital stock liability decreased 1.16 per cent, reflecting a drop for the industry group and "slight increases" in the railroad and independent groups. The profit and loss deficit of $52,277,373 in 1928 "doubled to $104,425,379 in 1933." On the basis of mileage operated in 1933, "this five-year loss amounted to $3,347 per mile for the 436 roads." The long-term debt, unpaid matured funded debt, and accrued interest of these 436 roads in 1933 was 53.8 per cent of total liabilities, as compared with 46.5 per cent in 1928. Railway operating revenues amounted to $83,338,009 in 1933, a decrease of $40,997,711 or nearly 51 per cent as compared with 1928; their net railway operating company was the equivalent of 0.6 per cent on investment in 1934, as compared with 1.84 per cent in the case of Class I roads.

Comparing the two pre-depression years 1928-29 with the depression years 1932-33, the report reveals that in the latter period 214 line-haul carriers among the short lines reported deficits, an increase of 46.6 per cent over the number reporting 1928-29 losses. The aggregate increase in the amount of such deficits was, however, only eight per cent. Meanwhile, in 1935 dividends in the amounts of $5,194,000 and $6,458,000 were paid respectively by line-haul carriers and switching and terminal companies among the Class II and III roads.

Physical Condition and Equipment

Available data indicate that the "major part" of the total Class II mileage is laid with 60 to 85 pound rail, and the bulk of Class III mileage with 60 to 75 pound rail. The complete range, however, is "from 28 to 110 pounds per yard on the main lines and from 25 to 130 pounds on yard tracks and sidings." Also, "heavy grades and sharp curves are numerous" because "traffic volume has not warranted expenditures for grade reduction or curvature changes to any great extent." More than 70 per cent of the Class II roads and more than 77 per cent of the Class III roads "reported maximum grades against traffic of over one per cent." In this connection, switching and terminal companies "do not appear to be seriously affected, as less than 40 per cent have gradients of over one per cent." The extent to which the short lines have deferred maintenance was not determinable from the available data, but the report finds it clear that "increased expenditures for that purpose were indicated as necessary by the course of maintenance expenditures" in recent years.

At the end of 1934, Class II and III line-haul roads had 1.1 per cent of the total freight cars, as compared with 1.6 per cent at the close of 1928. And "if the physical characteristics of the equipment of the small roads were considered, as to character of construction and condition, it is certain that the situation of these roads would be more unfavorable as compared with the large roads." Between 55 and 60 per cent of the locomotives of reporting Class II and III line-haul carriers and about 40 per cent of those of the switching and terminal companies were over 20 years old, the average age of locomotives in the two groups being respectively about 24 years and 20 years. The average tractive effort of steam locomotives—30,738 pounds on the line-haul roads and 35,948 pounds on the switching lines—compared with 47,712 pounds for locomotives of Class I roads. Also, the locomotive equipment of individual short lines "consists of relatively more varied types than that of trunk lines." In this discussion of equipment, attention is called to the fact that short lines depend largely on their trunk line connections for their freight cars, and thus "per diem or average payments do not warrant investment for the benefit which would be received." Passenger-train cars "are not of vital importance to small

railroads—many do not own any such cars and others own only a limited number."

Lack of Traffic the Real Problem

Among "factors which affect the present condition of short line railroads" the lack of traffic is first considered. The small roads have been affected by the loss of l.c.l. to motor carriers and losses of carload business to the same competitors have been mounting. Large business organizations are doing their own trucking, and the freight forwarding companies "concentrate their operations on the large railroads, and by using trucks for distribution, to some extent withdraw business that formerly moved through junction points to the small roads." Eighty-three of the 103 short lines that responded on the point reported "motor vehicle competition to be serious." The 20 which did not find such competition serious "are largely those aided by their relations with control interests and by the character of their traffic or length of aggregate haul, or which serve territory where good highway facilities are lacking." Sixteen of the 25 reporting switching and terminal companies stated that highway competition was not serious. A "relatively small number" of the short lines reported that water competition was a factor in their plight.

In connection with the discussion of the short line rate level, comparative data are given to show that such roads have "uniformly received higher revenues per passenger-mile and per ton-mile than have Class I railroads." This is, therefore, regarded as a less serious phase of the short line problem than the loss of traffic. Also, available data relating to 15 Class II and III roads indicate that the divisions of through rates received by short lines "do not in any important degree account for their general financial condition." In 1933 there was a reduction of 56.8 per cent as compared with 1928 in the cost to short lines of equipment hire, while at the same time there was "a considerable reduction" in net amounts receivable under joint facility rents; and an 0.6 per cent net rise in interest charges.

Operating conditions on short lines were found to be dissimilar in many respects from those of trunk lines, and they do not present the same opportunities to meet changed conditions. For example short lines in many instances must endure the ofttimes "inconvenient and expensive" process of co-ordinating the handling of their business with the junction-point train services of their trunk-line connections. On the other hand the average annual compensation per short line employee ranged from 20 to 30 per cent less than that of employees of Class I roads in the 1920-1935 period; but short line taxes in 1935 were 39.11 per cent of net operating revenue as compared with 27.87 per cent for Class I roads. The tax ratio of Class II and III switching lines was lower than 39.11 per cent which is the figure for line-haul carriers.

Interest Charges Important

In the discussion of capitalization attention is called to the fact that "interest charges are an important factor" in the case of all short lines having funded or unfunded debt; and the railroad-controlled lines had the heaviest capitalization. The explanation of the latter, it is suggested, may be found in part in the fact that the physical condition of these trunk line affiliates is on the whole "somewhat above average;" and they also own "considerably more" equipment than the others.

The report's final chapter dealing with "Considerations Relating to the Future of Short Line Railroads" first gives attention to the more important causes of abandonments—exhaustion of natural resources, highway competition, and railroad competition, which latter has been assigned as the reason for the abandonment of 1,105 miles between 1920 and 1935. Reference is also made to "other causes" of abandonments, the most important of them being the relocation of lines. As to the near future it is conceded that the mileage of all railroads to be abandoned will be substantial, but "there is no indication that it will reach the proportions which some regard as necessary."

After further discussion of abandonments and alternatives therefor, such as adjustments of wages and working rules and the substitution of bus and truck service, the report goes into its consideration of "lines of approach to betterment of short line conditions." In the latter connection it is first found that past efforts to pool purchases indicate that "the wide separation of short lines and the diversity of their requirements preclude successful efforts in this direction." Note is taken, however, of "many instances in which ingenuity has been shown in adapting equipment and operating methods to unusually difficult conditions." Thus the possibilities of financing "cost-reducing devices" should be thoroughly explored. Then there is the question of making greater use of highway equipment and of reorganization, in which latter connection "improved procedures are available."

Rate Increase No Solution

Generally speaking it is felt that the problems of the short lines can not be solved by increases in rates, "unless increases are contemporaneously made by competing forms of transportation;" but in the matter of divisions the remedies at hand "are weighted somewhat in favor of the short or weak line." Consolidation "may be passed over" as an unimportant source of relief, and such co-ordination as would come from an interchange clearing house, simplification of the rate structure or the use of containers or other devices "are mainly for the Class I roads to consider." On the legislative side it might be possible to strengthen the commission's power over through routes and joint rates, such as is proposed in a bill now pending in Congress; but "there is no way of estimating how important the change suggested would be to the short lines, who are actively supporting such legislation." The report closes with the suggestion that, for the most part the short lines and their trunk line connections "must, through their individual and collective efforts, continue to adjust themselves to changed conditions in transportation." Some short lines "are experiencing no particular difficulty" in this connection; while the position of others under Class I ownership might be improved if they were turned over to local interests which could operate them at lower costs.

The Problem of the Thin Traffic Branch Line

This report covers 15 pages of text and six appendices. Included in the latter are reprints of two articles from the *Railway Age's* Motor Transport Section—that entitled "Improved Service Featured in Rail-Highway Co-ordination" which appeared in the issue of February 22, 1936, and that entitled "Short Line Turns to Rail-Highway Operation" from the issue of November 23, 1935. The former deals with Northern Pacific operations and the latter a co-ordinating device used by the Mound City

& Eastern. Also, there is the report of the co-ordinator's mechanical advisory committee on the Norfolk Southern "railbus", which that committee's chairman—L. K. Sillcox—called "an equipment type ideally suited to the traffic requirements of the district in which it operates."

Mr. White in his report considers among other things the high cost of way freight service, the excess of branch over main line costs, the apparent relation of thin traffic branch lines to receiverships, branch-line "movement" expenses (wages, fuel and other locomotive supplies) per train-mile and per ton-mile and the labor costs of branch line operation. In the latter connection he suggests the possibility of adjustments which Mr. Eastman discussed in his foreword, as noted at the outset. Next come sections on economical power for branches and of co-ordination of rail, bus and truck operation. The Northern Pacific operation described in the above-mentioned *Railway Age* article is called "typical" of the latter, while the Mound City & Eastern device is cited as "another method of reducing operating costs of thin traffic lines."

Conclusions

Mr. White states in his letter transmitting the report to Mr. Eastman that lack of time and of uniform statistics precluded the making of an exhaustive study of the problem in hand. He does, however, list the following eight conclusions drawn from the information developed in his report:

1. The Class I railroads have gone far in reducing costs of road-haul on heavy traffic main lines. These costs per revenue ton-mile are well below the costs of competing highway over-the-road trucking operations.
2. On the other hand, the Class I railroads are still operating many thousands of miles of thin traffic branches on which the cost per revenue ton-mile of moving the traffic to or from the connections with the main line is greatly in excess of the main line cost. This cost is frequently higher than and the service inferior to that of trucks on highways paralleling these branches.
3. This branch line movement is comparable in part to the assembly and delivery operations in the terminals before and after the road haul. When the cost of this assembly and delivery operations on the branch is higher per revenue ton-mile than the cost on the highway and the service poorer, the railroads lose to some extent the advantages of the high-speed, low-cost movement of this traffic on the main line beyond the branch. While this excess cost on any one branch may be small in amount, the aggregate on railroads with a large mileage of branches is substantial and presents a real problem.
4. In spite of this high branch unit cost, the system revenue from traffic originating or terminating on the branch is generally sufficient to pay the full operating expenses of the branch and to leave enough for the out-of-pocket cost of moving this traffic on the main line.
5. The problem of the thin traffic branch is generally not one of abandonment, but of reducing operating expenses so that the cost of the movement on the branch will not absorb a disproportionate share of the system revenue from this branch traffic.
6. A reduction in expense in some relation to the falling off in traffic has presented many difficulties, particularly where conditions require heavy annual expenditures for maintenance of way, regardless of traffic, and where the taxes assessed against the branch are heavy.
7. To secure a reduction in operating costs necessary for the preservation of thin traffic branch lines of Class I railroads requires, among other things, a reasonable adjustment of existing labor agreement rules and of some State laws with respect to branch line operation that will permit the economical operation of light, modernized motive power. A reasonable adjustment of taxes in some States also appears necessary if communities desire continuance of rail service sufficiently to aid the railroads in meeting highway costs.
8. There are also possibilities of reducing costs and improving service on branches through more extensive co-ordination of main line and branch operations, and the partial substitution of highway for rail operation where more economical. Such co-ordination has been worked out on a number of Class I railroads but there are still many thousands of miles of branch and main lines to which it might be applied.

Trans-Missouri Board Foresees Big Traffic Rise

INCREASES of 226 per cent in the movement of fresh fruits, 169 per cent in potatoes and 150 per cent in canned goods are expected in the last quarter of 1937, according to reports presented at the 49th regular meeting of the Trans-Missouri-Kansas Shippers Board held in St. Louis, Mo., on September 21, presided over by the general chairman, Clyde M. Reed. It is further estimated that grain traffic will show an increase of 81.4 per cent over the 30,316 cars of this commodity loaded in the last quarter of 1936 in the territory in question. All of the estimated agricultural products loadings show large increases as the result of bumper crops. Despite an expected decrease of 25 per cent in ore loadings and 20 per cent in sand, stone and gravel, it is estimated that there will be 30,000 more cars loaded in this territory in the last quarter of 1937 than in the similar period of 1936.

In general, the shippers attending the meeting were optimistic as to the prospects for business. Chairman Reed pointed out that the farmers will have more money to spend this year than they have had since 1929, with resulting increased traffic for the railroads. The railway men, too, were optimistic as to their ability to handle the traffic efficiently, but in the addresses expressed pessimism as to the effects of punitive legislation in prospect, particularly the train limit bills, and the wage increases already granted and applied for.

The Addresses

The meeting was addressed briefly on general transportation conditions by L. M. Betts, manager of the car service division, A.A.R., Washington; by E. W. Coughlin, district manager of the car service division at St. Louis, who gave a resume of the wheat movement; and by J. H. Tedrow, traffic commissioner of the Kansas City Chamber of Commerce, who spoke on truck and rail progress as to co-operation. W. H. Mussey, research engineer of the Pullman-Standard Car Company, Pullman, Ill., and O. Jabelmann, assistant general superintendent of motive power, Union Pacific, Omaha, Nebr., discussed live load and dead weight of freight cars as a factor in operating costs, which papers will be published in detail in later issues. Resumes of papers presented at a recent meeting of the Pacific Coast Transportation Advisory Board were also distributed at this meeting. These consisted of discussions of the cost of special switching service, by L. D. Owen, vice-president, Westland Warehouses, and on 50-ft. box and automobile equipment, by R. J. Blitch, traffic manager, Pacific Lumber Company.

Joint Luncheon

Robert S. Henry, assistant to president, Association of American Railroads, Washington, spoke at the joint luncheon of the board and the St. Louis Traffic Club. He traced the history of the basic cost of transportation, pointing out that when St. Louis was a small fur-trading post, the cost per ton per mile was 20 cents, which figure, as the years went by, was reduced to one cent per ton per mile by the efficiency of the railroads, a rate that is still being maintained despite large increases in wages, increases in the costs of materials and supplies and staggering increases in the taxes paid by the railroads. He pointed out that the railroads have always been successful in meeting rising unit costs by increas-

ing efficiency, but that, under punitive legislation and wage increases, such as are demanded at present, this process can not go on forever.

Mr. Henry said that the cost of railroad transportation is the basic cost of all transportation, in that railroad rates exercise their influence on all rates. Railroad costs have been brought down and kept at a low level by evolution rather than revolution in railway operating practices. This evolution completely changed freight transportation in the last 15 years, but because the railways lacked showmanship, it was not until recently that attempts have been made to bring this to the attention of the public.

American railroads provide the best transportation in the world at the lowest cost, while paying the highest wages. This situation, Col. Henry maintained, is threatened by the train limit bill, which if passed would serve as an effective bar to railroad progress. Approximately half of the railroad transportation service in this country is rendered in trains of more than 70 cars, Col. Henry said, and there has never been the slightest proof that longer trains were unsafe to operate. On the other hand, a fixed ratio between train miles operated and grade crossing accidents has prevailed for many years, during which time, for every million train miles operated, 1¾ people have been killed and 4½ injured at grade crossings. Should the bill become a law, it would add 90,000,000 unnecessary train miles. This means that 150 more people will meet their deaths annually and 500 more people will be injured. This, Col. Henry maintained, is a heavy price to pay for a few more jobs for train and engine crews.

Other Addresses

J. H. Tedrow, traffic commissioner, Kansas City Chamber of Commerce, in discussing truck and rail progress as to co-operation, said that little progress had been made along these lines, but that there was, in fact, open warfare between the two agencies of transportation. Before there can be any co-operation between railways and trucking interests, there must be harmony and co-operation among the truckers, a situation that does not prevail today by any means.

Those truckers who do not know their own costs are a menace to the industry. The truckers must have a set-up of rates that will be uniform and that will be adhered to strictly. When that occurs, Mr. Tedrow said, it is logical to assume that the railroads—dealing with a sound, established industry instead of a chaotic one—will quote joint rates under which long-distance shipments may be moved by railroad and truck.

Mr. Tedrow reported that there is no progress toward an agreement between those who maintain that the highway companies should be absorbed by the railways as the established and efficient transportation agency, and the opponents of this idea, who insist that there should be no return to the railroad monopoly in transportation. He pointed out that shippers have a direct responsibility in improving transportation conditions, and can do much towards this end by refraining from chiseling on rates by playing one competitor against the other. This is a short-sighted policy that may result in chaos. After the trucks present a united front, both the railroads and the trucks should co-operate, Mr. Tedrow said, accepting temporary disadvantages on each side for the eventual good.

L. M. Betts, manager of the car service division, A.A.R., stated that, during the recent rush wheat movement, his observation was that the railroads worked together as never before, and that there was a growing appreciation of the fact that the railroads could accomplish much more under pressure by working together than as rivals. He said that by the end of August, 42,219 new cars had been delivered during 1937, with 31,419 on order as of September 1. With the completely rebuilt cars placed in service, this will mean an increase of over 80,000 cars in service during the year, the largest increase since 1930.

E. W. Coughlin, district manager of the car service division, in giving a resume of this year's wheat movement, stated that the division began its preparation in April. On April 23, the eastern and southern roads were given definite quotas for reducing the number of western line box cars on their lines, and the executives of these roads were requested to co-operate in seeing that this was done. As a result, there were 20,050 more cars on western roads on July 1 than there were on May 1. Most of the eastern and southern railways, Mr. Coughlin said, exceeded their obligations under car service rules to short route and otherwise expedite cars back to the grain-loading territory.

L. & N. Stages Broadcast from "Pan American"

(*Continued from page 452*)

equipment for picking up the short waves. Because of the comparative weakness of short wave broadcasting, it was necessary to establish pick-up point near the tracks in the vicinity of the train, to be used by each station when it was on the air. The arrangements which had been made with the various radio stations made it imperative that transportation be synchronized. To accomplish this, each division assigned an operating officer to the train to clock it and insure accurate movement. In addition, traffic and operating employees along the line acted as contact men with the radio stations.

After these arrangements had been made a semi-dress-rehearsal was held on August 10 and 11. On this test run the car ran from Cincinnati to New Orleans as part of the Pan American and everything was placed in readiness.

* * *

Handling Stationery on Portable Platforms

Railway Mechanical Associations Meet

Simultaneous sessions held at Chicago by Fuel and Traveling Engineers, Car Department Officers, General Foremen and Boiler Foremen

ONE of the most impressive aggregations of railway fuel men, traveling engineers, mechanical department supervisors and foremen ever assembled at one time and place was that which met at the Hotel Sherman, Chicago, September 28 to October 1, to attend simultaneous meetings of the following four associations: Railway Fuel & Traveling Engineers' Association, Car Department Officers Association, International Railway General Foremen's Association and Master Boiler Makers Association. Approximately 500 railroad men attended the opening sessions of these associations and emphasized the need for a better acquaintance with general railway accomplishments and problems including public relations, as well as improved practices in their respective departments.

One of the most important educational features of the joint meetings was the exhibition of railway mechanical equipment and supplies provided by the Allied Railway Supply Association. A final check showed a total of about 107 supply companies with exhibits occupying over 10,000 sq. ft. of actual display space.

M. J. Gormley Addresses Fuel Men

The first annual meeting of the Fuel & Traveling Engineers' Association since the amalgamation of the two parent associations was presided over by President J. D. Clark, fuel supervisor, Chesapeake & Ohio, who said in his opening remarks that the union of these two groups was the greatest step ever taken by either in furthering their mutual objective of conserving fuel and promoting and improving the efficiency of locomotive service.

A feature of the first day's session was an address "Relations of Fuel Supervisors and Traveling Engineers to Economy of Railroad Operation" by M. J. Gormley, executive assistant, Association of American Railroads. Mr. Gormley said that the railroads are the largest buying agency in the United States and in 1936 spent more than $800,000,000 for fuel, materials and supplies, one-third of which was for fuel. The remarkable progress in the economical use of fuel, Mr. Gormley said, is indicated by the fact that, in freight service, each ton of fuel produced 12,452 gross ton-miles in 1932, this figure being increased to 16,746 gross ton-miles in 1936, an increase of 34.5 per cent in efficiency. In passenger service one ton of fuel produced 110.8 passenger-train car miles in 1923 and 130.4 car miles in 1936, an increase of 17.7 per cent in fuel efficiency.

Reduced to this simplest terms, the railways in 1936 moved one ton of freight equipment and lading a distance of one mile for each 1.4 ounces of fuel in 1936 which may be compared with 2.9 ounces in 1923. Mr. Gormley credited this greatly increased efficiency to improved design and construction of locomotives, application of the latest scientific methods of firing, reduction in road delays by reason of improved operating methods and increased train lengths and the effective work of railway personnel in all departments.

With reference to the 70-car train limit bill which passed the United States Senate at the last session, Mr. Gormley said that this is a make work measure and not a safety measure, and that no one knows better than fuel and traveling engineers how much this measure, if adopted, will cost the railroads. He referred to the development and application of the Type AB brake which greatly adds to the facility of train operation and reduces the possibility of injuries due to slack in long trains and said that one of the railroads having the longest trains now has over 40 per cent of its cars equipped with this type of brake. He stressed the great reduction in fuel efficiency which will result from handling trains of 70 cars with existing locomotives designed to haul trains of twice that length.

In closing his address, Mr. Gormley emphasized the importance of securing an adequate public appreciation of railway problems and achievements and outlined some of the work now being done along this line by the Association of American Railroads. As regards the responsibility of individual railroad men in fostering a favorable public opinion, he said, "Every railroad man in the country should acquaint himself with the facts about American railroads and should make an honest, constant attempt to pass along these facts to all the people with whom he comes in contact and it would not be long before a big part of our present-day public relations job would be accomplished. We have the best product of its kind available, our prices are fair, and we have an encouraging degree of confidence from the public. Your association has unusual opportunities to present the story of the industry to a very large group of important people."

Other Addresses and Reports at the Fuel and Traveling Engineers Meeting

Following Mr. Gormley's address, the meeting adjourned and reconvened on the afternoon of the first day to listen to the report on "Fuel Records and Statistics," presented by Chairman E. E. Kamey, fuel engineer, B. & O. The remainder of the afternoon session was devoted to an address by Roy V. Wright, managing editor, *Railway Age*.

In discussing the subject "Higher Aesthetic Standards," Mr. Wright called attention to the present urgent public demand not only for faster and more comfortable railway service but for standards of cleanliness, tasteful decoration and harmonious color schemes far in advance of anything ever before attempted, either in this country or abroad. He said that American railroads have not

been slow in meeting this demand, and that one of the most effective things which fuel supervisors and traveling engineers can do to effect further improvements is to control the smoke nuisance in the operation of steam locomotives and engine terminals, and also to concentrate on maintaining locomotive conditions conducive to safe, efficient and smooth operation. Mr. Wright referred at some length in the latter part of his address to the notable achievements in locomotive smoke abatement during the past six years in Hudson County, N. J., opposite lower New York City. He said that the Fuel and Traveling Engineers' Association has always been a leader in the field of the efficient use of fuel and in smoke abatement, and should not relinquish its efforts in this direction.

Other committee reports and addresses, presented during the four-day meeting of the association, were as follows: Report on New Locomotive Economy Devices, by A. G. Hoppe, assistant mechanical engineer, Chicago, Milwaukee, St. Paul & Pacific; report on Steam Turbine and Steam Condensing Locomotives, by L. P. Michael, chief mechanical engineer, Chicago & North Western; address by J. E. Davenport, assistant chief engineer motive power and rolling stock, New York Central; report on Front Ends, Grates and Ashpans, by Prof. E. C. Schmidt, University of Illinois; report on Attention to Valve Motion and Its Effect on Fuel Economy, by M. F. Brown, fuel supervisor, Northern Pacific; report on Utilization of Locomotives, by A. A. Raymond, supervisor of fuel and locomotive performance, New York Central; report on Air Brakes, by W. H. Davies, superintendent air brakes, Wabash; address by L. K. Sillcox, first vice-president, New York Air Brake Company; report on Locomotive Firing Practice—Oil, by R. S. Twogood, assistant engineer, Southern Pacific; report on Locomotive Firing Practice—Coal, by W. C. Shove, general fuel supervisor, New York, New Haven & Hartford; report on Inspection, Preparation and Utilization of Coal, by W. R. Sugg, superintendent fuel conservation, Missouri Pacific; address by Eugene McAuliffe, president, Union Pacific Coal Company.

Car Department Officers' Association

The Car Department Officers' Association held a two-day meeting on Tuesday and Wednesday, September 28 and 29, with an attendance of about 200. A considerable portion of the first session was devoted to business of the association, including the adoption of a new constitution and by-laws.

The meeting was called to order by the president, K. F. Nystrom, superintendent, car department, Chicago, Milwaukee, St. Paul & Pacific. Following the presidential address the meeting listened to an address by Roy V. Wright, managing editor, *Railway Age*.

In his address, Mr. Nystrom outlined his conception of the purposes of the association. One objective, he said, was to provide a means for more efficient performance of duties by the promotion of personal acquaintance among car department supervisors throughout the length and breadth of the land, including Canada and Mexico. No group of employees, he said, are so closely interwoven in point of duties as car department employees because of the continent-wide interchange of equipment.

Mr. Nystrom enumerated the various duties of car department supervisors and officers in the problems concerning which the association can take active part. Proper maintenance of passenger-train cars with the introduction of air conditioning, high speed, new types of brakes and improved standards of cleanliness has created the necessity for an exchange of ideas for the promotion of economical maintenance. He called attention to the introduction of electric welding in the building of cars and its effects upon car design, shop facilities and methods. He emphasized the importance of the car man as a back-door salesman of railway service who can accomplish more in many cases than the traffic man by his front-door approach. He also referred to the association as an important factor for the promotion of safety first.

In his address, Mr. Wright met the argument of some mechanical department officers that the Mechanical Division of the Association of American Railroads is capable of handling the standards and recommended practices relating to the car department and that it receives sufficient help from the local car foremen's associations in making revisions of the interchange rules. He cited the wide fields of activity in the car department which are largely untouched by the program of the Mechanical Division. There are the difficult and baffling problems concerning the management of car shops and repair yards, including tools, facilities and shop methods. There are the questions concerning the selecting and training of employees and supervisors. He referred to the changes taking place in the handling of freight and passenger traffic all of which call for the pooling of ideas and energies, if supervisors are to keep pace with the changes being made and the improvements which are available.

Mr. Wright referred to the higher passenger-train speeds which, he said, call for better maintenance, for more critical inspections and for greater attention to the details which are concerned with insuring safe operation. One of the functions of the association, he said, is to devote its energy to determine the best ways and means of maintaining passenger equipment in the pink of condition in order to strengthen the railroads in their battle to build up and retain passenger revenue.

In conclusion Mr. Wright said, "Conditions during the past few years have played havoc with all of the associations and some of them have been severely crippled, if not almost entirely incapacitated. Railroad officers who sit in judgment on whether or not their subordinates should affiliate themselves with the various associations must base their opinions on the type of programs which are submitted and upon the practical results achieved. Those associations which have a real function to perform will survive, if they have the courage, the imagination and the will to press forward with vigor and confidence.

At the Tuesday afternoon session papers were presented by W. L. Ennis, manager of refrigerator service and freight claim prevention, Chicago, Milwaukee, St. Paul & Pacific on the car man's duties connected with loss and damage and by C. J. Nelson, superintendent of interchange, The Chicago Interchange Bureau on the interchange and loading rules. Both papers aroused lively discussion. Particular attention was given to high-speed switching impact as the cause of extensive damage to lading and equipment. Following the discussion the association passed a resolution bringing to the attention of the Association of American Railroads its belief that it would be helpful to have a study made to determine the maximum desirable switching speed, especially for house cars. The discussion indicated a general belief that while such a determination would be of little direct value for disciplinary purposes, its educational value would be great.

At Wednesday's sessions addresses were delivered by W. J. Patterson, director, Bureau of Safety, Interstate Commerce Commission; J. T. Gillick, chief operating officer, Chicago, Milwaukee, St. Paul & Pacific; Leroy

Kramer, vice-president, General American Transportation System and E. S. Fitzsimmons, president, Allied Railway Supply Association. A paper was also presented by A. F. Stuebing, railway mechanical engineer, United States Steel Corporation on the application of high-tensile steel in car equipment. A large part of the last session on Wednesday afternoon was devoted to a discussion of the rules of interchange lead by M. E. Fitzgerald, general car inspector, Chicago & Eastern Illinois.

The General Foremen's Association

The opening session of the International Railway General Foremen's Association convened in the Rose Room of the Hotel Sherman, Chicago, at 9:45 a. m. Tuesday, with an attendance of 70 members and guests. The meeting was called to order by the president, Fred T. James, general foreman locomotive department, Delaware, Lackawanna & Western. Following the invocation, addresses were made by R. E. Woodruff, vice-president, Erie R. R., and H. J. Schulthess, chief of personnel, Denver & Rio Grande Western. Coincidentally, both of these speakers chose the problem of manpower on the railroads as the theme of their remarks. Mr. Woodruff, with a keen sense of appreciation of the conditions surrounding railroad operation today, centered his talk upon the all-important question of morale among shop men. He pointed out that efficiency and production are directly dependent upon the state of mind of a shop as a whole, and that the building of morale is and must be left in hands of the supervisors. Supervisors, he said, must be leaders—in thought as well as in action—and that, in spite of the fact that most of them came up through the ranks of the skilled craftsmen, it is far more important that they devote their energies to intelligent planning, direction and the training of their men than in knowing the intimate technical details of a job. The foreman, he said, is the interpreter of his railroad's policies and the facts concerning its operation.

The supervisor must deal with three types of workmen: the individual thinkers, who are conservative and are not much concerned with what other people do; the radical element, who are not interested in the railroad industry as a whole but are out to get all they can individually; and the third group, who are more or less satisfied with their jobs, working conditions and wages, but are willing to go along with the crowd when occasion requires and are influenced by one group or the other. This third, or middle group, constituting as it does over half of the total number of employees, is the fertile field in which the work of the intelligent supervisor may be done. Among other things, Mr. Woodruff said that the efficiency of a shop is determined by planning rather than by hustle and bustle; that the way to get more work done is not to drive men but to make it easy for them to do a day's work smoothly. It is part of a foreman's job, he said, to see that his men understand the reason for doing work in a certain way and to encourage the development of labor-saving devices and improved methods. The average man is fairly easy to handle and responds quickly to suggestions. A foreman, said he, must be big enough to encourage suggestions—not to close the door to improvement. A foreman who "knows it all" is headed for the scrap pile.

In conclusion Mr. Woodruff said, in part: "Handling the human element is the most important job of the mechanical supervisor. Colleges turn out engineers, manufacturers turn out machines and tools, but the handling of the human element is in the hands of the mechanical supervisor. In this respect railroads are behind industry as a whole. It cannot be too strongly emphasized that the proper handling of men and the consequent improvement in morale has not been given adequate attention. No railroad can have a greater asset than good foremen with all they mean to morale. And, remember, mechanical supervisors are promoted not because of their ability as machinists and boilermakers but primarily for their ability to lead and train men. Their greatest asset is to be known as good managers of men."

Mr. Schulthess, in his remarks, offered a logical answer to the question "How Long Can We Put Off Training Men?" As he proceeded, it became increasingly clear to the audience that this is a duty the railroads can ill-afford longer to delay. Dealing as he was with the vital necessity, after the depression years, of replenishing the supply of trained mechanics through the medium of apprenticeship instruction, he made an urgent plea for the railroads to set higher standards in the selection of young men for training. He pointed out that the human element makes up the largest single item in the railroad budget—46 cents out of every revenue dollar—yet it is seldom, if ever, discussed in a budget meeting. He pointed out that only through apprenticeship training with assured continuity will we be able to set up new and higher standards of craftsmanship and if we are to provide the master craftsman of 1942 we must start now. He also summarized a survey made over a period of years which indicated that only 36 out of a hundred apprentices eventually completed their apprenticeships and that this would only graduate enough apprentices to provide for an average yearly turnover among mechanics of 1.8 per cent whereas the normal turnover was at least 4 per cent. In conclusion, Mr. Schulthess said "If management will analyze the problem it is bound to arrive at the conclusion that the further development of the human element is not only highly desirable but is absolutely necessary if we are to keep pace with progress. How long can we put off training men? Only until the men at the top recognize the wisdom and necessity for doing these things and give their wholehearted support to such a program."

At the afternoon session of the first day Roy V. Wright, managing editor of *Railway Age* spread before the general foremen in attendance the picture of the opportunities they have to be a powerful factor in influencing public opinion in favor of the railroads. The great problem in industry and on the railroads, Mr. Wright said, is to educate the employees as to the actual conditions and some of the handicaps under which their employers are laboring, and to inspire and stimulate them and their supervisors to get these facts over to the public. He proceeded, then, to outline instances and the methods by which railroad supervisors may take an active part in this job of creating good will—the railroad plant visitations of school groups and youth organizations; the public exhibitions of new railroad equipment; the value of cultivating the railroad "fans" and the model builders.

Mr. Wright cited the work which has been done by the railway employees and taxpayers associations, ship-by-railroad clubs and railway employees and citizens leagues. As an example of what can be accomplished by these organizations he cited the employees and taxpayers organizations in Kentucky which, working in complete harmony with railway managements was largely instrumental in getting on the statute books a law which prohibited trucks of over nine tons gross weight from the highways of that state. The railroad industry, he said, is today a target for all kinds of unfavorable political action. Where, he asked, can the railroads hope to get the necessary votes if not among

their own employees? The alternative is one of disaster for the railways because highway and waterway competitors have votes and are using them against the railroads.

The task of successfully directing the human element, Mr. Wright said, is a profession although not recognized as widely as it should have been. He cited the numerous opportunities which are offered supervisors for improvement in the practice of this art and urged all supervisors to avail themselves of them. In conclusion, he urged railroad supervisors to interest themselves in community affairs in which way they not only make an impression upon the entire community but will naturally contact more intimately with the leaders in civic affairs who can be most helpful if they have a proper understanding of railroad conditions.

Other papers presented at this and later sessions were: Freight car repairs, by J. E. Echols, Norfolk & Western and J. Thompson, Delaware, Lackawanna & Western; "Can Modern Machine Tools Cut Repair Costs," by L. H. Scheifele, Reading Company and "Safety Problems About the Shops," by R. C. Helwig, Delaware & Hudson. On Wednesday morning a three-hour forum was conducted on a variety of mechanical department subjects.

Boiler Makers Meeting

The twenty-fourth annual meeting of the Master Boiler Makers Association was called to order with about 150 members and guests present at the opening sessions and President M. V. Milton, Chief Boiler Inspector, Canadian National, presiding. In opening the convention, President Milton said that no radical change in conventional steam locomotives has yet proved its desirability in practice and that mechanical engineers are confronted with a difficult task in securing further increases in capacity with economy of operation owing to weight and size limitations. One solution, however, is the use of high tensile steels which permit going to higher boiler pressures, a subject of great interest to boilermakers as they are called on to aid in the design and at all times maintain locomotive boilers in condition for safe economical operation. President Milton said that the Master Boiler Makers Association affords the greatest educational opportunity to boiler foremen in solving mutual problems because it brings together boilermakers from railroad and contract shops throughout the country.

Following President Milton's address E. R. Battley, General Superintendent of Motive Power and Car Equipment, Canadian National, also congratulated the Association on effective work in the past and said that it is largely responsible for improvements in boiler material specifications, design and maintenance, which have been made to date. Mr. Battley made an urgent appeal for the training and development of competent railway boiler forces and said that boiler foremen must not think that they have done their duty until they have developed young men who are qualified to fill their positions when the need arises. He said that this training takes time, patience and money, all of which however are well worth while.

D. C. Buell, Director Railway Educational Bureau, Omaha, Nebraska, was the principal speaker in the first afternoon session. In discussing the general subject of apprentice training and the development of skilled craftsmen particularly in the boiler trade Mr. Buell said that the need is just as great as ever owing to continuing developments in materials and shop methods which necessitate the widest experience and acquaintance with modern methods. He said that the present ratio of apprentices to mechanics is about one to twenty and that if all finish their respective courses this is enough to take care of only one per cent labor turnover whereas provision should be made for a labor turnover of at least three per cent. Since 45 per cent of railway maintenance expenditures are for labor the necessity of properly training and developing mechanics and supervisors is apparent. The thought given to this important subject should start with the selection of apprentices who unless properly guided may be started on work for which they are not adapted simply to fill a vacancy. The result is that they lose interest, not much is expected of them and they fail to meet even those expectations. Mr. Buell said that probably in no other craft are more helpers advanced to the position of mechanics than in that of boiler making and this practice results in the development of specialists and hinders rather than helps the adequate development of boiler supervisors. Mr. Buell also urged the development of definite schedules in order to give apprentices training in all of the important departments of boiler shop work, instead of following the present practice which is all too general of keeping each boy on the first job to which he proves well adapted.

Other addresses and committee reports were as follows: Report on Topic No. 1, "Pitting and Corrosion of Locomotive Boilers and Tenders," Chairman L. R. Haase, District Boiler Inspector, B & O.; Report on Topic No. 5, "Improvements to Prevent Cracking of Firebox Sheets Out of Staybolt Holes," Chairman C. W. Buffington, General Master Boilermaker, C. & O.; Report on Topic No. 3, "Proper Thickness of Front Tube Sheet," Chairman Walter R. Hedeman, Assistant to Chief of Motive Power and Equipment, B. & O.; Report on Topic No. 8, "Committee on Law," Chairman Myron C. France, General Boiler Foreman, C., St. P., M. & O.; Address by Col. C. C. Stibbard, Chief Operating Officer, The Board of Railway Commissioners for Canada; Report on Topic No. 2, "Autogenous Welding and Cutting as Used With Fabrication of Boilers and Tenders," Chairman Albert F. Stiglmeier, General Foreman, Boiler Department, N. Y. C.; Report on Topic No. 4, "Improvements in Safe Ending and Application of Flues and Tubes," Chairman Frank A. Longo, Welding and Boiler Supervisor, Southern Pacific; Report on Topic No. 6, "What Is Being Done to Prevent Back Tube Sheets From Cracking in Radius of Flange and Out of Tube Holes," Chairman Louis Nicholas, General Boiler Foreman, C. I. & L.; Report on Topic No. 7, "Topics for 1938 Meeting," Chairman George M. Wilson, General Boiler Supervisor, American Locomotive Company.

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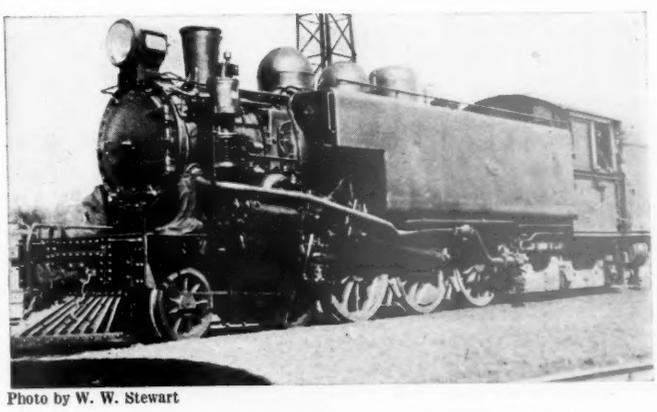

Photo by W. W. Stewart

Class W-ab Tank Locomotive, New Zealand Railways

Britain's 1936 Record

THE railways of Great Britain earned a net revenue £36,527,499 ($181,176,395) in 1936 as compared with £33,695,058 ($167,127,488) in 1935, according to a report issued by the Ministry of Transport, finance and statistics department, under the title "Railway Returns." In turn, their operating ratio decreased from about 81 per cent in 1935 to 80 per cent in 1936.

Excluding those sections operating under the jurisdiction of the London Passenger Transport Board, the British roads, in 1936, carried a total of 638,208,113 passengers (exclusive of commuters and holders of workmen's tickets) and hauled a total of 280,712,094 long tons of freight. In addition, they carried daily 635,689 persons holding commutation tickets and, during the year, 237,476,705 passengers holding single-trip workmen's tickets. Additional 488,000,000 passenger trips originating in the London board area bring the grand total of passenger single-trips to 1,745,000,000, compared with 1,697,000,000 in 1935. Total revenue from passenger traffic (exclusive of mail and express) reached £55,773,370 ($276,635,915), an increase of 3.78 per cent over the preceding year's yield. Freight revenue totaled £90,234,922 ($447,565,213). Total revenue from railway operation amounted to £163,983,487 ($813,358,096). Railway operating expenses amounted to £130,570,351 ($647,628,941).

During 1936 no change in rates or fares were made by the Railway Rates Tribunal, although a general review of charges was made in June of that year. In view of more favorable business conditions, wage cuts operative since March, 1931, were further reduced in July from 2½ per cent to 1¼ per cent and the regular time-and-a-quarter overtime rate was restored.

Due to substantial reductions in tax evaluations of railroad properties under the Railways (valuation for rating) Act of 1930, and the subsequent loss of assessments upon which the rate relief for April 1, 1931, to December, 1936, was based, the Railway Freight Rebates Fund at the close of the year, had become liable to the roads for an estimated sum of £9,762,000 ($48,419,520). The fund, which was first established on December 1, 1928, furnishes the machinery whereby tax payments ordinarily paid by the carriers to the state are returned to them as payment for the grant of stipulated rebates on shipments of the so-called depressed agricultural and industrial commodities. The rebates in 1936, as was pointed out above, exceeded tax assessments, and the rebates fund organization was permitted to assume a 16-year loan to cover its debt to the roads, by the Railway Freight Rebates Act of 1936. In turn, to reduce the spread between tax income and rebate expenditures, the latter narrows the limits on goods eligible for the rate reduction to exported coal, coke and patent fuel, milk and live stock, which provisions will remain in effect until 1941. The new rebate rates are fixed at 1½ pence per ton plus 20 per cent of the remainder of the standard rate for exported fuels and 14⅔ per cent of the total standard rate for milk and live stock.

Lightweight Inspector's Lantern

A lightweight carbide lantern, weighing less than 3 lb. and equipped with a safety flame protector, heat-resisting glass lens and porcelain burner tips, has recently been developed by the National Carbide Corporation, New York. It is designed to meet the exact requirements of car inspectors and is suitable for use in the signal and maintenance-of-way departments. This lamp can be used for eight hours on one charge of carbide, and it has an insulated handle to protect the workman against third rails and any exposed electric equipment, a positive water-feed control and a patented rear light of any desired color specified by the purchaser.

The National Carbide NJ-1 Inspector's Lantern

To insure long service and prevent corrosion, brass has been used in fabricating the water-carbide chambers. A novel and convenient feature of the lantern is the treatment of the threads joining the upper part of the lantern with the carbide chamber. In order to prevent damage when shaking out the contents of the carbide chamber, the usual arrangement has been reversed and the inside threads placed inside the chamber and outside threads on the upper part of the lantern.

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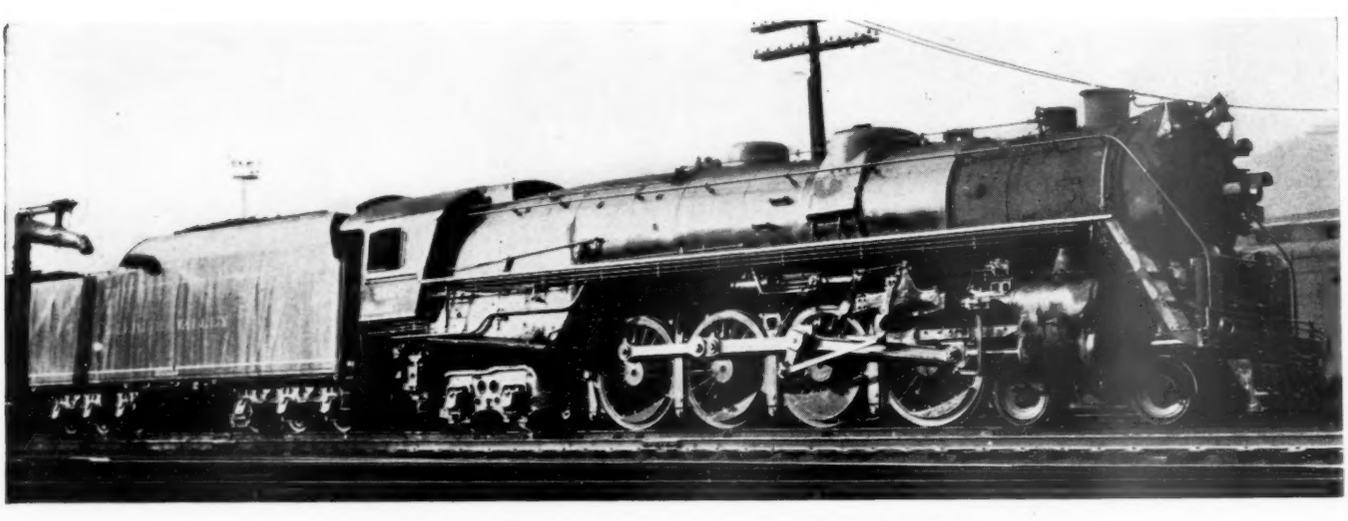


Lehigh Valley Milk Train Ready to Leave the "Plug" at Coxton, Pa.

NEWS

Forecast 6.2% Car Loading Rise

Shippers boards estimate that increase over fourth quarter of 1936

Freight car loadings in the fourth quarter of 1937 are expected to be about 6.2 per cent above actual loadings in the same quarter in 1936, according to estimates compiled by the 13 Shippers' Advisory Boards. On the basis of these estimates, freight car loadings of the 29 principal commodities will be 6,638,840 cars in the fourth quarter of 1937, compared with 6,248,684 actual car loadings for the same commodities in the corresponding period last year.

All of the 13 Boards, except the Ohio Valley and the Pacific Northwest, estimate an increase in car loadings for the fourth quarter compared with the same period in 1936. The greatest increase anticipated by any Board is that of the Southwest, which estimates that freight car requirements in the fourth quarter will be 27 per cent above the same period last year, due in large part to the heavier movement of grain, cotton, cotton seed, and products except oil, vegetables and coal. Loading of grain in that territory in the fourth quarter of 1937 is expected to be more than three times as great as in the same period last year and for cotton an increase of 60 per cent is anticipated.

The tabulation below shows the total loading for each district for the fourth quarter of 1936, the estimated loadings for the fourth quarter of 1937, and the percentage of increase or decrease:

Shippers' Advisory Boards	Actual loadings 1936	Estimated loadings 1937	Per cent*
Alleghany	971,552	995,373	2.5
Pacific Coast	229,910	245,735	6.9
Pacific Northwest..	216,745	203,678	6.0†
Southeast	675,553	694,136	2.8
Southwest	403,933	513,112	27.0
Great Lakes	423,035	479,403	13.3
Atlantic States ...	629,701	701,287	11.4
Central Western ..	256,183	261,849	2.2
New England	123,153	127,524	3.5
Northwest	355,689	396,370	11.4
Mid-West	825,198	854,267	3.5
Ohio Valley	806,359	803,560	0.3†
Trans-Missouri-Kansas	331,673	362,546	9.3
TOTAL	6,248,684	6,638,840	6.2*

* Per cent increase.
† Per cent decrease.

Of the 29 commodities included in the estimate, increases are expected in twenty-four and decreases in five. Of the commodities for which increases are estimated in the fourth quarter of 1937 compared with the same period in 1936, those showing the largest percentage of increase are: Grain, 47.2 per cent; agricultural implements and vehicles other than automobiles, 30.5 per cent; cotton, 25.5 per cent; cotton seed and products except oil, 25 per cent; ore and concentrates, 16.7 per cent; automobiles, trucks and parts, 14.6 per cent; canned goods, 13.4 per cent; and fresh fruits other than citrus, 11.2 per cent. For coal and coke, an increase of 3.3 per cent is estimated. Decreases of 11.8 per cent for hay, straw and alfalfa; 16.8 per cent for citrus fruits; 7.8 per cent for live stock; 2.8 per cent for gravel, sand and stone; and seven-tenths of one per cent for sugar, syrup and molasses are estimated.

Historical Society to Meet

The New York chapter, Railway & Locomotive Historical Society, will hold its opening Fall meeting on October 8, in the auditorium of the Museum of Science & Industry, Rockefeller Center, New York City. A short business meeting and an inspection of the museum will comprise the program.

N. & W. Surgeons Meet

The Norfolk & Western Railway Surgeons' Association held its annual convention on September 29 and 30 in the Pennsylvania hotel, New York City. The program included addresses by Dr. W. H. St. Clair, association president, and by George Dunglinson, Jr., assistant vice-president in charge of traffic of the road.

Oldest Commuter Dies

On September 28, with the death at 87 of Robert Wardrop, who since 1868, or for over a period of 69 years, has commuted between Sewickley, Pa., and Pittsburgh, the Pennsylvania lost its oldest commuter. In the issue of *Railway Age* for May 2, 1936, Mr. Wardrop was referred to as the oldest commuter in the United States; when this claim went unchallenged, he became known affectionately to his fellow passengers on the train as "the grand dean of all commuters." Mr. Wardrop, who was chairman of the board of directors of the First National Bank, began his commuting on the old Pittsburgh, Fort Wayne & Chicago, now part of the Pennsylvania. He is the father of W. Miller Wardrop, assistant to the general manager of the Pennsylvania at Pittsburgh.

Missouri Pacific Case to be Closed

Principal bondholders and RFC agree to go along with debtor's plan

The Interstate Commerce Commission announced this week, at the resumption of hearings in the reorganization proceedings of the Missouri Pacific, that it was not its intention to delay the reorganization of the company until the completion of hearings by Senator Wheeler's sub-committee on the holding company control of the road. Commissioner Meyer, in announcing the decision of Division 4, said that there was nothing in the law which forced the commission to stay its action in closing the case until the hearings were completed. He also announced that the record would not be broadened to include testimony introduced during the Senate committee hearings. This announcement came during argument on a petition of the committee headed by Charles A. Beard for permission to intervene in the proceeding

At the session on September 28, during the cross-examination of William Wyer, secretary-treasurer of the Missouri Pacific, Maxwell Brandwen, counsel for the Beard committee, and Ernest S. Ballard, counsel for the road, clashed sharply regarding the question of injecting the issue of past financial abuses in the Missouri Pacific system into the case. Mr. Brandwen contended that the commission should know all the facts regarding the Van Sweringen domination of the MOP before it decided upon a plan of reorganization.

As the session drew to a close, it became evident that all the principal bondholders with the exception of the Reconstruction Finance Corporation were willing to go along with the debtor's plan for reorganization. During the cross-examination of Mr. Wyer, C. M. Clay, RFC counsel, indicated that he was not satisfied with certain language in the plan. He went on to intimate that he felt that the Morgan interests would be able to dominate the new finance committee of the company and would see to it that Morgan's loan to the MOP was paid before that of the RFC.

On September 29, Chairman Jesse Jones of the RFC wrote to Commissioner Meyer saying that the modified plan of the debtor "is probably as equitable as can be arrived at." This approval by the RFC, the MOP's largest creditor, paves the way for the complete acceptance of the debtor's plan.

Co-ordination Job Should Start Soon

Eastman sees need for early beginning on that task in transport field

Before long a way must be found of starting on the job "of fitting the various forms of transportation into a system in which they will work with and for each other in every appropriate way and work against each other only within the limits of what may be termed a sane and healthy competition," according to the view expressed by Interstate Commerce Commissioner Joseph B. Eastman in his September 23 address before the annual meeting of the American Transit Association at White Sulphur Springs, W. Va. The foregoing is what the former co-ordinator calls "co-ordination"; for his "natural interest in the word" arising from his "having been a 'co-ordinator'" assures him that, as applied to transportation, it does have "a very real meaning"—that it "comprehends an idea of major and critical importance to transportation, an importance which will not diminish but continually increase."

Meanwhile, however, Mr. Eastman finds that "in the lingo of the day" the word, like "liberal" and "progressive," is probably used very often "without any clear conception of what it means"; and in public regulation it has as yet "received little more than lip-service." As an example of the co-ordination idea "put to practical use" the speaker cited the complementary rail and bus services of the traction companies.

In that part of his address which considered the magnitude of the task of regulating motor carriers, Mr. Eastman revealed that the lack of sufficient funds to support an adequate staff is resulting in congestion in many branches of this work. He continued to assert that "unless we can secure financial relief" the work "is in serious danger of bogging down, notwithstanding that our staff has put in an extraordinary amount of overtime work for which, unlike some others, it receives no pay."

The former co-ordinator, who characterized his address as "not an official pronouncement on behalf of the commission" but one for which he was to be held "solely responsible," spoke on "The Policy of the Motor Carrier Act," taking as "a sort of text" that act's declaration of policy with respect to motor carriers. In opening he referred in light vein to the charge that the Interstate Commerce Commission is "railroad-minded," observing that this has perhaps come "as something of a surprise to the railroads, for they have not been accustomed to viewing us quite in that light." Nevertheless, he adds, "the word 'railroad-minded' seems well on its way to a place in the next edition of the dictionary," although he thinks that "probably a better mental state in this day and age would be 'transportation-mindedness'."

In the latter connection, Mr. Eastman continues to assert that "This country is entitled to the best system of transportation which can be provided, and that is clearly one in which every means of transit is used to the best advantage, be it young or old or only middle-aged." The government of the United States, he adds, "can properly play no favorites."

Next comes the speaker's reference to the Motor Carrier Act's declaration of policy, over which those interested in the bill "manifested more concern . . . than over any other single provision." Mr. Eastman doubts whether such concern was warranted from either a legal or a practical standpoint. In the former connection, "the declaration is so broad and general in its terms that it would be difficult to set aside any specific action of the commission on the ground that it was in violation or disregard of the expressed policy of the Congress," and "as a practical matter," it is the speaker's belief that "the policy stated would be in substance the policy of the commission, even if it had not been expressed by the Congress." Experience has convinced him that "men who administer any law are much more important to its successful operation than the precise wording of the statute itself."

Noting the "growing tendency to regulate industry on the part of most governments, and certainly on the part of our government," Mr. Eastman cited as an accompanying development "the changing concept of the functions of regulation and of the purposes to be accomplished." He recalled in this connection the follow through from the original conception of the Interstate Commerce Commission as "a means for the protection of the public against the railroads" to a grasping of "the truth that the public interest in transportation requires something more than the mere protection of shippers, travelers, employees, or other members of the public against extortion, injustice, or dangerous conditions—it is quite as necessary to have efficient carriers who can keep up with the march of the times." And, despite "the fashion in certain quarters to denounce 'governmental interference in business'," Mr. Eastman declared it to be a fact that "in the transportation business, at least, there has been no recent extension of government regulation which did not have strong carrier support, and certainly this was true of the Motor Carrier Act."

"We have got away from the idea that monopoly is the basic reason for public regulation," he went on. "Competition has its abuses as well as monopoly, and the need for curbing both classes of abuses is now clearly recognized. . . . The truth is that if the excesses and extortions of monopoly were the sole reason for public regulation, it would now be difficult to make a case for such regulation of the transportation industry."

Here comes Mr. Eastman's discussion of "co-ordination" as noted at the outset, followed by an outline of the manner in which the commission has, in administering the Motor Carrier Act, co-operated with state regulatory authorities and with organizations of motor carriers. The commission in general is receiving "very excellent co-operation from state authorities

(*Continued on page 471*)

C. of C. Favors National Policy

U. S. Trade body would have I. C. C. regulate all types of carriers

The United States Chamber of Commerce in response to many inquiries from the public and the press has issued a small booklet which sets out its policies on national economic subjects. In its section on transportation and communication the Chamber states that it favors a national transportation policy and goes on to say that it should be the national policy in regulating transportation "to foster the development and utilization of rail, highway, water and air transportation to the fullest extent consistent with fair and sound competitive principles, permitting availability at all times to shippers and travelers of the services economically best adapted to their needs without prejudice for or against any particular form of transportation." The Chamber recognizes that all interstate transportation for hire is affected with the public interest and should be regulated, but it feels that the regulation should be confined to assurance of fair rates, adequate service and public safety and should avoid interference with management. The Chamber would have all regulation of interstate commerce placed under the jurisdiction of the Interstate Commerce Commission, with separate divisions to deal with each form of transportation. In any reorganization of government agencies, says the report, the Interstate Commerce Commission should remain an independent body, reporting directly to the Congress.

The Chamber of Commerce would make it mandatory that all common carriers be required to obtain certificates of convenience and necessity and all contract carriers to obtain permits to operate. It does not feel that operators of one form of transportation should be barred by law from operating other forms when properly qualified by obtaining certificates or permits as required by other applicants. In fixing just and reasonable rates, the Chamber would require the commission to preserve the inherent advantages of each form of transportation and to consider the effects on traffic movement, provision for efficient service at lowest consistent cost, and average return adequate in normal times to permit reasonable debt reduction and accumulation of proper reserves to assure stability.

Discussing the simplification of the rate structure, the report says that this should be worked out by the transportation companies in co-operation with shippers and with the assistance of the commission. It is also felt that greater flexibility should be secured through due recognition of competitive and market conditions as well as distance or cost of service. Also, provision should be made for greater expedition of rate cases and reparation claims.

The Chamber of Commerce is definitely opposed to government ownership of the railways, and states its position as fol-

lows: "We believe that any form of government ownership or operation of railroads would result in the creation of politically-controlled bureaus, in such extravagance in operation, and in such lack of needed service that the development of an adequate national transportation system would be impeded and the result would be not only a greater burden upon the shipping public and the country at large but great damage to industry as a whole." The Chamber says that "adhering to its firm belief that government should not engage in any field of business in which private enterprise can adequately serve the public interest" it will firmly oppose all proposals of government ownership of railroads.

It is also felt by the Chamber that railroad regulation has been too stringent in the past, and it would have that regulation reduced to the point "where it will be confined to assurance of fair rates and of public safety and will avoid interference with functions belonging to management." Also, in its opinion, water transportation as well as highway transportation should be opened to railroads on an equal basis with water and highway carriers.

According to the booklet, greater responsibility for railroad rates should be placed upon railroad management and the regulating authorities should recognize the propriety of varying rates as may be shown to be reasonably necessary to meet competitive or market conditions or competition of other forms of transportation without unfair discrimination against intermediate localities. The Fourth Section of the Interstate Commerce Act, says the report, should be restored to the form which it had between 1910 and 1920, with suitable provisions to assure prompt decisions by the commission. It would also like to see the statutory period for advance notice before the effective date of new rates reduced, the law amended to permit simplification and expedition of procedure in rate cases, and the maximum suspension period reduced to not more than three months. The periods within which claims may be filed for excessive rates, overcharges and undercharges should be substantially shortened and reparation awarded only to persons suffering actual damage.

The Chamber favors the principle of voluntary consolidation and thinks that it should be preserved and that Congress should now release the commission from its obligation to maintain a comprehensive plan of consolidation of all railroads into a limited number of systems, preserving the benefits of all the studies which have been made in some less exacting form for indicating the commission's views as to public interest. For the purpose of eliminating unnecessary and wasteful competition and furthering efficiency of service, says the Chamber's statement, railroads should be permitted and encouraged by law and by the commission to effect consolidation, always subject to approval by the commission as to the public interests which are involved. It also believes that consolidation or joint use of terminals and pooling of equipment and services should be developed through co-operation.

The Chamber of Commerce would require common carriers by water to obtain certificates of public convenience and necessity and be subject to regulation as to rates, including port-to-port rates. It would also require all vessels which are not common carriers and which accept cargo for hire to charge the established common-carrier rates. It is the belief of the Chamber that regulation should require that the rates of both water and rail carriers to competitive points be adequately compensatory to the carriers making the rates. The Chamber would have the government discontinue its operation of commercial water transportation.

Concerning the subject of highways, the report says that highway programs should be based on "comprehensive surveys, economic benefits of each highway, and proper relationship to the whole public budget, states being responsible for highways of general use, and lesser political units primarily responsible for those of local use. Federal aid should be applied only to highways of general use, and should be matched by state funds, with suitable exceptions in states containing large areas of federal land. For the upkeep of highways, the Chamber recommends that in addition to taxing the passenger automobile, buses should be taxed on seating capacity, and trucks should pay a special tax "reflecting demand upon highways."

New York Warehouse Order Postponed

The Interstate Commerce Commission has postponed the effective date of its order in the New York Warehouse case from October 13 to November 13.

Air Express Shipments Up

Air express shipments for August increased 29.8 per cent over the corresponding month in 1936, the Air Express Division of the Railway Express Agency has announced.

North Western Adds New Train

The Chicago & North Western on September 27 added a new passenger train between Clinton, Iowa, and Chicago on a daily round trip schedule. The train leaves Clinton at 6:05 a.m., arrives in Chicago at 9:15 a.m., leaves Chicago at 4:30 p.m. and arrives in Clinton at 7:40 p.m.

New Jersey Tax Case Resumed

The litigation between five roads entering New Jersey and the State, in which the carriers seek relief on allegedly excessive tax assessments for 1934, 1935 and 1936, was resumed on September 27 before Federal Judge Philip Forman, at Trenton, N. J. The appeal of the carriers from 1932 and 1933 tax levies appears on the October docket of the court.

Proceedings on the case were adjourned on June 23.

Club Meeting

The Traffic Club of Newark, N. J., will hold its next regular meeting on October 4, in the Chamber of Commerce Auditorium, Newark. The address of the evening will be given by Col. J. M. Johnson, Assistant Secretary of Commerce. A traffic forum will meet on October 11 in the Chamber of Commerce Auditorium, to be called "Railway Express Night." The leading discussion will be presented by R. W. Starkey, district sales manager, Alleghany department, Railway Express Agency.

B. & L. E. 2-10-4 Locomotives—A Correction

In an article appearing in the *Railway Age* of September 4, page 312, there appeared a description of ten 2-10-4 type locomotives, delivered during the past summer to the Bessemer & Lake Erie by the American Locomotive Company. In this article it was stated that the firebox is fitted with two Thermic syphons and three arch tubes. This omitted mention of a third syphon which is installed in the combustion chamber.

U. P. Pays Fine

The Union Pacific has paid fines totaling $505 following a plea of guilty in the case involving alleged unlawful operation by it of motor vehicle service between Shoshone, Idaho, and Ketchum and Sun Valley Lodge, according to a recent announcement from Secretary W. P. Bartel of the Interstate Commerce Commission. The case against the U.P., which has since received a certificate for the bus route involved, was handled by Law and Enforcement Section of the I.C.C. Bureau of Motor Carriers.

Wage Mediation Continues

Mediation of the demands of the five transportation brotherhoods for a 20 per cent increase in pay was resumed at Chicago on September 29 after a three day adjournment. Dr. William Leiserson, a member of the National Mediation Board, began meetings on August 28 and continued to meet with each group until September 25 when he adjourned the hearings to permit the representatives to spend a few days at home. At the time of going to press no agreement had been reached.

Claim Payments Increase

Freight claim payments during the first six months of 1937 amounted to $11,796,395, an increase of 26 per cent compared with the same period of 1936, when the total was $9,363,032. These payments amounted to 0.67 per cent of total freight revenue during the first six months of 1937 and 0.59 per cent during the first six months of 1936. Claims paid on fresh fruits, melons and vegetables in the first six months of 1937 totaled $2,820,890, an increase of 11 per cent compared with payments of $2,541,491 in the same period last year.

B. & O. Camera Fans Trip

Recognizing the growing interest in photography, the Baltimore & Ohio will operate a "Camera Fans—Autumn Leaf Excursion" from Washington, D. C., to Oakland, Md., on Sunday, October 3. Oakland is located atop the Allegheny Mountains, with an altitude of approximately 2,600 feet, and the railroad reports that the countryside in the vicinity "is alive with picture possibilities." Autos will meet the party on arrival and take them for a 30-

mile trip through the surrounding country. The special train consisting of coaches and a dining car will leave Washington at 8:10 a.m.; and the returning train will leave Oakland at 5:30 p.m., arriving back in Washington about 10:20 p.m.

Three "Rockets" Placed in Service This Week

Three "Rocket" trains, one between Chicago and Des Moines, Iowa, and two between Kansas City and the Twin Cities, were placed in service by the Chicago, Rock Island & Pacific on September 25 and 29 respectively. The Des Moines Rocket will make a round trip daily, leaving Des Moines at 7:15 a.m., arriving in Chicago at 1:15 p.m., leaving Chicago at 5:45 p.m. and arriving in Des Moines at 11.45 p.m. The Twin Cities Rockets will each make one trip daily, one leaving Minneapolis at 12:20 p.m. and arriving in Kansas City at 9:45 p.m. and the other leaving Kansas City at 10 a.m. and arriving at Minneapolis at 7:20 p.m.

With the inauguration of these three Rockets, the Rock Island now has five lightweight streamlined trains in operation.

Seek to Restrain Hospital Association

A committee of the St. Louis Medical Society has requested the attorney-general of Missouri to begin quo warranto proceedings to prevent the Missouri Pacific Hospital Association "from practicing medicine," on the grounds that corporations are not permitted to practice medicine in Missouri. The Hospital association began to function in 1876 and every employee of the railroad becomes a member when he begins to work for the road. Association dues range from 50 cents to $2 a month. About 29,000 persons in 11 states are members of the association. The medical staff consists of 672 physicians, surgeons and specialists at 316 points on the system. The association has a 300-bed hospital at St. Louis, a 135-bed hospital at Little Rock, Ark., and has arrangements with 57 other hospitals under which members of the association are cared for, the association paying the bills.

British Road to Spend $5,817,981 in Equipment Program

The Great Western (Great Britain) has recently announced a renewals program for next year which will include the building of 381 passenger-train cars, 3,600 freight cars and 100 locomotives. The work, all to be done at the Swindon works of the road, is expected to afford direct employment for about 5,000 persons and to cost about £1,172,980 ($5,817,981).

Of the 381 passenger-train cars to be built, 231 will be of the new standard corridor-coach type with end vestibule doors, for use on main line services, 75 non-corridor coaches for local services, 10 buffet cars, 30 louver-ventilated express cars for shipments of fruit and flowers and 10 cattle cars (with stockman's compartment), designed especially for the conveyance of pedigree cattle by fast passenger trains.

The five restaurant cars will each have a first and third class saloon furnished with settee type seats. The five buffet cars, the first of their type to be built by the road, will each be equipped with a "snack bar" counter providing eight "stand up rest seats," and, in addition, table-seating accommodations for 20 passengers.

Of the 3,600 new freight cars to be built, 900 will be fitted with vacuum brake equipment to permit of high speed service and 200 will be built especially for the conveyance of fruits and vegetables. To provide further for increasing container traffic, the construction of 300 flat cars is included in the program. Of the 100 new locomotives to be built, 10 will be of the "Castle" passenger class, the remainder being for service on local or freight trains.

"Peanuts"

Protesting the stress which railroad managers lay on hourly wage rates, spokesmen of the five transportation brotherhoods cite the case of the mythical peanut vendor.

"His percentage of profit on a bag of peanuts might be fair, and since only a small portion of his hour is consumed in selling one bag, his hourly earnings are high, but his daily or monthly earnings would be grossly inadequate."

Very well, let us suppose that about five o'clock one of these fine autumn afternoons, the head of a rail brotherhood felt the need of a light snack. Let us suppose that he stopped by the stand of a peanut vendor and offered him a dime for a bag of his wares.

What would be his reaction if the vendor replied:

"I'm sorry but the peanuts will cost you three dollars. You see, this is the only bag I have sold today. I can't possibly stay here and supply you with peanuts for any such sum as ten cents; I must have a fair wage for my day's work."

It seems a safe bet that the customer would eat no peanuts, however keenly he might be alive to the social problem of the vendor without customers.

So it may not be sheer innate perversity that causes rail managers to attempt to keep the cost of their services within a range the public will pay.

—From the Wall Street Journal

B. & O. Fan Trip to Emphasize Historical Features

Comprising, in combination, a lengthy railroad excursion, an inspection trip of shop facilities, and an exhibition of the "transition of train transportation", an educational tour for New Yorkers will be operated to Baltimore, Md., on Sunday, October 10, by the Baltimore & Ohio. Upon arrival at Baltimore, the party will have the opportunity of visiting spots notable for their part in railroading history, including Bailey's Roundhouse, where the Pangborn collection of full-sized wooden models of historic motive power is on exhibit, and the road's Mt. Clare shops, the oldest railroad shops in the country. It is planned that a reproduction of the "Thom Thumb", original locomotive of the road built in 1829, a reproduction of the "William Galloway", built in 1837, and the original "William Mason", 1856, will all be placed on exhibit under steam, at the head of a train of cars appropriate, chronologically, to each. Present-day shop facilities and rolling stock will also be inspected at the Riverside shops and roundhouses of the road.

The special train, to be hauled by the new four-cylinder "George H. Emerson", will leave the Jersey City, N. J., terminal at 9:15 a.m.

Reading to Run Another "Rail Ramble"

The Reading will operate its second Fall "rail ramble" through the Pennsylvania coal regions from Philadelphia, Pa., on October 10. The road will once again afford patrons of the trip opportunity to inspect the country from the vantage-point of a regulation gondola car, to be placed at the end of the train during the run over

Carload Freight on a Reading "Rail Ramble"

the Catawissa branch on the return trip. The entire trip, covering 350 miles, will pass through Reading, Shamokin, Sunbury and West Milton, traveling, in part, over little-used routes in mountainous territory.

The train will leave Reading terminal, Philadelphia, at 8:30 a.m.

N. & W. Issues Folders to Stimulate Coal Trade

To promote the production and sale of coal mined along its lines in southern West Virginia, southwestern Virginia and eastern Kentucky, the Norfolk & Western is issuing a series of twelve four-page, 8½ in. by 11 in. illustrated folders, for distribution at regular intervals among coal dealers throughout the United States.

The front covers of the folders are large reproductions from paintings in water colors by Leslie Ragan. Printed in four colors, they depict in turn the mining, preparation, transportation and marketing of coal produced in Norfolk & Western territory. The texts accompanying each present, among other things, a historical background of the Pocahontas coal-mining area and brief descriptions of mining methods and marketing operations.

It is expected that a total of 240,000 copies of the publication will be distributed during the next twelve months, or about 20,000 copies of a new folder each month.

76-Mile Line Opened in Sicily

A new 76-mile link in the Sicilian sector of the Italian State Railways, creating a direct line from Palermo, chief city of the island, to the west coast, has recently been opened, according to the Railway Gazette (London). Located in the northwest corner of the island, the new line links Trapani directly with Alcamo, replacing, for through traffic, the former 120-mile circuitous route between those points running via Mazara and Castelvetrano. By means of continuous shifts, the road was constructed in record time, the contractors' gangs working at night under powerful electric lights, requiring the erection of a temporary high-tension power line along the right-of-way.

Physical characteristics of the new road include a ruling grade of approximately 1.7 per cent, relatively sharp curves, a summit of 945 ft. above sea-level near Burca, seven viaducts, and 10 tunnels, the largest of which extends for over a mile under Mt. Barbaro.

Total cost of the line is estimated to be approximately 130,000,000 lira ($8,666,666).

New Equipment for the "Royal Blue"

The Baltimore & Ohio, on September 26, formally launched its latest equipment for "The Royal Blue," running daily between Washington, D. C., and New York. The third new set of rolling stock built for service on this run, the train is completely streamlined. At its head end, the road has placed a bullet-nosed, "stream-styled" steam locomotive designed by Otto Kuhler, consulting engineer of design, on the basic contour and color scheme already embodied in the road's recently-built Diesel-electric locomotives. Royal blue is the dominating color note of the car interiors, supplemented by basic tones of cream and gray. Upholstered metal furniture has been placed in the dining and observation cars.

A feature of the new train is the so-called "tavern," occupying a whole half of one of the coaches and having a separate kitchen, refrigerators and steam tables. The diner is decidedly unconventional in design, having a section in the center seating twelve on lounges upholstered in buff leather, while ordinary table arrangement occupies the remaining floor space. A half-circle bar is located in the center of the cafe end of the observation car.

400 Former Railroaders Have Retirement Board Jobs

Approximately 400 of the Railroad Retirement Board's present roster of 1,000 employees are persons with railroad experience, employed in accordance with the Railroad Retirement Act's provisions giving preference to former railroaders. The Board's staff is selected in accordance with the civil service rules but former railroaders are preferred under provisions of the law similar to those according general civil service preference to World War veterans.

When "non-technical" positions, such as stenographer or computer, are to be filled persons are taken from the general civil service lists of eligibles for such positions —with the former railroaders among the latter getting the preference. In instances where the positions to be filled require specialized experience or training, special civil service examinations are held. One of these latter has thus far been conducted—that in December for adjudicators. About 2,400 persons passed this examination, and of these 200 adjudicators have thus far been appointed. In addition 80 adjudicators in the service of the Board prior to the passage of the 1937 act are continuing under that provision of the law which permits the Board to retain any member of its original staff.

Commission Creates New Division

With the installation of John R. Rogers as a member of the Interstate Commerce Commission, there have occurred several important changes in the Division assignments of the various commissioners. In addition to the new assignments, the commission has created a new unit, to be known as Division 6, composed of Commissioners Eastman, Mahaffie and Splawn. The new division will be known as the accounting division and will handle the classification of accounts.

The major change in the existing divisions is the assignment of Commissioner Rogers to Division 5—the motor carrier division—supplanting Commissioner Caskie. Mr. Rogers will have charge of all motor carrier matters instead of Commissioner Eastman. However, Mr. Eastman will continue to be a member of the division.

Commissioner Caskie has been assigned to Division 2—the principal rate division—where he takes the place of former Commissioner Tate. Mr. Eastman, being relieved of his duties as chairman of the motor carrier division, will be able to devote considerable time to the new division, which will be concerned with revisions in the water lines' accounting system, revisions in rail classifications and the complete rounding out of a system of accounting for motor carriers.

Railroad Enthusiast Activities

The Washington (D. C.) Division, Railroad Enthusiasts, Inc., accompanied by the Metropolitan Society of Model Engineers, will make an inspection trip to the Richmond, Fredericksburg & Potomac's Acca roundhouse and shops at Richmond, Va., on October 24. The party will leave Washington in a special coach on R. F. & P. No. 93 at 9:05 a.m. and arrive in Richmond at 11:40 a.m., where after lunch the coach will be transferred by switch engine direct to the shop. The party will return on the train leaving Richmond at 3:50 p.m., arriving in Washington at 6:15 p.m.

August Truck Loadings 11.5 Per Cent Ahead of Last Year

Movement of commodities by truck in August was 11.54 per cent greater than loadings in August, 1936, according to the American Trucking Association's monthly compilation of tonnage figures, from representative motor carriers. The current figure, however, was 1.54 per cent under the loadings reported for July, 1937. "Carriers stated that labor troubles largely were responsible for the decline in shipments," the A. T. A. explains.

A total of 115 general freight and commodity haulers by truck, in 26 states and the District of Columbia, filed comparable reports, showing an aggregate of 489,818 tons, as compared with 497,528 tons in July and 439,127 tons in August, 1936. Fourteen types of haulage by truck are included in the total figures, "giving a cross-section of the freight movement by truck"; but, the statement adds, "these figures are not to be taken as indicating the total tonnage volume of the trucking industry." The loadings index figure—the monthly average for 1936 represents 100—stands at 110.75 for August, compared with 108.59 for July.

The movement of general merchandise represented about 40 per cent of the total volume reported, showing an increase of 6.13 per cent over August, 1936 and 2.61 per cent over July, 1937. "Notable advances were made over 1936 business in the hauling of automobiles and petroleum products."

The New York Railroad Club

The New York Railroad Club will hold a dinner and business meeting on Friday, October 15, in the East Ballroom of the Hotel Commodore, New York, in place of its regular meeting in the Engineering Societies building. The dinner will be served promptly at 7:00 p.m., following which a talk will be given by W. J. Patterson, director, Bureau of Safety, Interstate Commerce Commission, whose subject will be "Some Activities of the Federal Government to Increase Safety on Railroads." This will be a review of the measures that have been taken by the Federal Government and are now in effect to provide safety on railroads; also some of the problems which are now before the Bureau. Members and guests are asked to

co-operate promptly and mail to D. W. Pye, secretary-treasurer of the club, requests for seat reservations at the dinner, for which a charge of $1.50 will be made for members and $2.00 each for guests.

As the Railway Business Association annual meeting will be held in Chicago on November 18, the New York Railroad Club has changed the date of its regular November Friday night meeting to November 12, in the auditorium of the Engineering Societies building, 29 W. 39th street, New York.

Southeast Shippers' Advisory Board Meeting

Two resolutions, one opposing railroad legislative measures and the other advocating lower rates for the South, were adopted at the forty-ninth annual meeting of the Southeast Shippers' Advisory Board at New Orleans, La., on September 17. One resolution authorized the officers of the board to appear before congressional committees for the purpose of expressing opposition to the train limit bill and other bills of a similar nature, the effect of which would be to increase transportation costs without benefit to the public. The other endorsed the efforts of southern governors and other groups to secure "reasonable and non-discriminatory" rates for the South.

During the discussion of the resolutions, Charles A. Helsell, general attorney for the Illinois Central at Chicago, charged that there is ground for suspecting that the purpose of pending regulatory legislation, such as the train length bill and the track and bridge bill, is to drive railroads into government ownership. Hugh White, president of the Alabama Public Service Commission, said that during recent years the South has found an economic necessity to extend its market territory, and in meeting this necessity has been confronted with the existence of freight rate barriers. Southern products, he said, cannot move freely, and in some instances cannot move at all into the North and East.

Accounting for Land Received from Sole Stockholder

Examiner Thomas D. Walton has recommended in a proposed report that the Interstate Commerce Commission find that the St. Joseph Belt violated the commission's accounting classification in recording a transaction wherein it acquired a parcel of land without consideration from its sole stockholder, the St. Joseph Stock Yards Company. Also, the examiner would cut the valuation of the land involved from $1,020,499 to $277,690.

The St. Joseph Belt treated the transaction as a donation and charged $1,020,499, —purporting to be the estimated money value of the land at the time of acquisition—to balance-sheet account 701, investment in road and equipment, segregating the same in road and equipment account 2, land for transportation purposes, a primary account entering into said balance-sheet account, and crediting an equal amount to profit and loss account 606, donations. Concurrently, the Belt charged the like amount to profit and loss account 615, surplus appropriated for investment in physical property, with a corresponding credit to balance-sheet account 779, additions to property through income and surplus, in order to segregate into what the Belt considered to be the proper corporate surplus account the purported estimated money value of the lands at the time of acquisition.

The examiner, however, ties up the transaction with a 1929 agreement to sell Belt's stock to Geneva Corporation, a Van Sweringen affiliate, which agreement stipulated that the land involved should be conveyed by Stock Yards to Belt. This stipulation, he holds, enhanced the value of Belt's stock, which was sold "just as would be accomplished by any capital contribution. If Belt had issued stock in exchange for the lands, the transaction would not be characterized as a donation. But the position of the Stock Yards Company would have remained in substance the same, since it was the sole owner of the outstanding stock."

Thus, after a discussion of the value of the land, which he holds should be stated at $279,690, Mr. Walton recommends an order requiring that the Belt's accounting entries be reversed and that the transaction be recorded with a debit of $279,690 to account 701, investment in road and equipment; and a credit of the same amount to account 735, premium on capital stock.

Old Colony Files Plan of Reorganization

Claiming that the treatment accorded it in the New Haven reorganization plan does not fairly reflect the value of its properties, the Old Colony, on September 28, filed with the federal district court in New Haven, Conn., and with the Interstate Commerce Commission an amended plan of reorganization for its property. The plan does not provide for independent operation of the Old Colony, but would leave the road as a part of the New Haven system as it is at present.

Instead of the distribution of securities as proposed in the New Haven plan, the plan of the Old Colony would have it receive the following securities in exchange for its properties:

1. Fixed interest bonds equal in principal amount to 50 per cent of the $14,348,000 outstanding Old Colony bonds, plus interest.

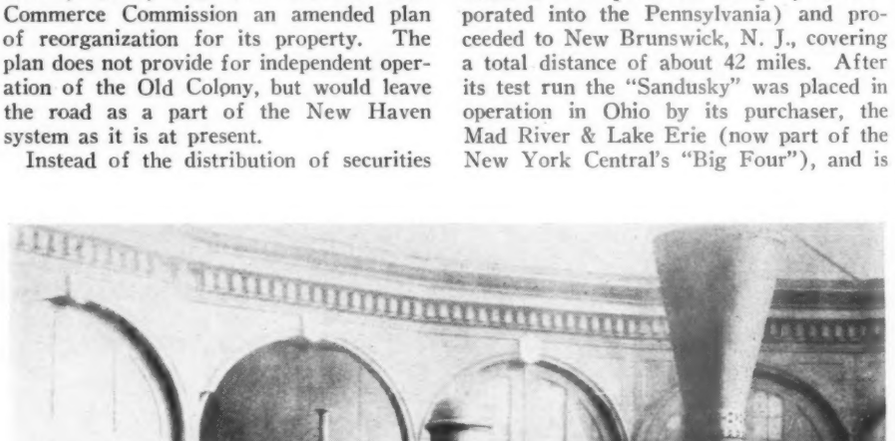
2. Income bonds equal in principal amount to 25 per cent of such bonds, plus accrued interest.

3. First preferred stock equal in amount to 25 per cent of such bonds, plus accrued interest.

Specifically, Old Colony would receive the following securities as seller of its properties to the New Haven: $7,174,000 principal amount of fixed interest bonds, $3,587,000 of income bonds, and $3,587,000 of first preferred stock, plus in each case an additional par amount of the same securities equal to a similar proportion of the accrued interest on the Old Colony bonds. Under the New Haven plan, the Old Colony bonds receive 40 per cent in new fixed interest bonds of the New Haven, 30 per cent in income bonds, and 30 per cent in first preferred stock.

October 3 Marks 100th Anniversary of First Rogers Engine

On October 3, 1837, the "Sandusky," first locomotive to be constructed under the direction of Thomas Rogers, the famous locomotive builder, rolled out of the works of Rogers, Ketchum & Grosvenor, of Paterson, N. J., and hauled a special train over the tracks of the Paterson & Hudson River (now the main line of the Erie) to Jersey City, N. J., where it transferred to the line of the New Jersey Rail Road & Transportation Company (incorporated into the Pennsylvania) and proceeded to New Brunswick, N. J., covering a total distance of about 42 miles. After its test run the "Sandusky" was placed in operation in Ohio by its purchaser, the Mad River & Lake Erie (now part of the New York Central's "Big Four"), and is



The Pangborn Model of the "Sandusky," Owned by the Baltimore & Ohio

said to be the first steam locomotive to operate west of the Alleghenies.

The Rogers works was sold to the American Locomotive Company in 1904 and turned out its last locomotive in 1912.

P. R. R. Officer Scores Experimental Rail Legislation

"The railroads of the country may well be characterized as the guinea pig of legislation, on which both state and national legislators seem to feel free to try out all kinds of experimental laws," declared J. F. Deasy, vice-president in charge of operation, Pennsylvania, speaking before the Beneficial Association of Pennsylvania Railroad Employees, Inc., at the Bellevue-Stratford Hotel, Philadelphia, Pa., on September 27. This assertion followed a general analysis of recent developments in railroad transportation and an enumeration of advances in the plant and service of the Pennsylvania, which, the speaker claimed, worked not only for the good of shippers and passengers but for the safety of employees.

"Despite these advances in safety and efficiency," Mr. Deasy went on to say, "some of our friends in state and federal legislatures have introduced experimental and restrictive legislation alleged to be in the interest of safety on the railroads, restrictions wholly unnecessary either to the operation of the railroad or comfort and safety of our patrons. In most instances they are an impediment in the advance of the art of transportation, which, if persisted in, will injure the railroad and in the end seriously impair its capacity to serve the public." In support of this thesis, the speaker argued that such restrictions make efficient operation difficult, prevent successful competition with subsidized transportation and place obstacles in the way of maintaining steady employment.

In reference to the carrier's responsibility to its security holders, Mr. Deasy pointed to "the unbroken record of annual return to them every year since the organization of the company," adding that such results were made possible in large measure by the co-operation of employees.

Labor Joins Y. & M. V. Protest Against M. P. Bus Route

The four train service brotherhoods have joined with the Yazoo & Mississippi Valley in filing with the Interstate Commerce Commission a brief in opposition to the petition of the Missouri Pacific Transportation Company, highway affiliate of the Missouri Pacific, for a reargument and reconsideration before the whole commission of its recently-denied application for authority to continue bus operations between Natchez, Miss., and New Orleans.

Division 5's adverse decision on this application was noted in the *Railway Age* of August 28, page 289. The case involved competitive relationships between the National Trailways System and the Greyhound Lines, the Missouri Pacific Transportation Company being associated with the former, while its competitor on the Route—Teche Lines, Inc.,—is a Greyhound affiliate. Commissioner Lee in a dissenting opinion held that the denial to the M. P. application results in shutting National Trailways out of New Orleans, and in leaving Greyhound with "an apparent, if not an actual, monopoly in bus transportation in the lower valley of the Mississippi."

The Missouri Pacific Transportation Company emphasized this point of view in its petition for reconsideration, filed last week; but the joint Y. & M. V.-brotherhood brief has since come through to protest the invasion of that road's territory by another railroad. The labor unions joining in the brief are the Brotherhood of Locomotive Engineers, Brotherhood of Railroad Trainmen, Order of Railway Conductors, Brotherhood of Locomotive Firemen & Enginemen, which are said to have joined the protest because the proposed bus operation would be to the detriment of their members as well as of the Y. & M. V. It is the view of these protestants that Division 5's decision "so properly disposes of the application as to make unnecessary a reargument and reconsideration."

I. C. C. Circular on Signal Inspection Law

A circular dealing with the signal inspection law, the only one of railway labor's "make-work" measures which was enacted at the latest session of Congress, has been sent to all railroads subject to the Interstate Commerce Act by Secretary W. P. Bartel of the Interstate Commerce Commission. The circular lists the following provisions of the law:

"(1) That block signal systems, interlocking, automatic train stop, train control and cab-signal devices in use on the date of the enactment of this amendatory provision, or such systems or devices hereinafter installed may not be discontinued or materially modified by carriers without the approval of the Commission.

"(2) Each carrier by railroad shall file with the Commission its rules, standards and instructions for the installation, inspection, maintenance and repair of the systems, devices and appliances covered by this section within six months after the enactment of this amendatory provision.

"(3) In case of accident resulting from failure of any such system, device or appliance to indicate or function as intended, and resulting in injury to person or property which is reportable under the rules of the Commission, a statement forthwith must be made in writing of the fact of such accident by the carrier owning or maintaining such system, device or appliance to the Commission."

Attention is called to the fact that provisions stated in the foregoing paragraphs (1) and (2) "are not restricted to automatic block signal systems, but apply equally to all such systems, whether manual or automatic"; also, the provisions stated in paragraph (3) "do not abrogate or supersede orders heretofore issued by the Commission requiring telegraphic reports and monthly reports concerning railroad accidents."

The time-limit for the filing of material covered in paragraph (2) expires February 26, 1938. This material and correspondence in connection therewith should be addressed to W. J. Patterson, director, Bureau of Safety, Interstate Commerce Commission, Washington, D. C.

Freight Car Loading

Revenue freight car loading for the week ended September 18 totaled 826,565 cars, an increase of 115,266 cars or 16.2 per cent above the preceding week, which included the Labor Day Holiday, an increase of 36,708 cars or 4.6 per cent above the corresponding week in 1936, and an increase of 119,745 cars or 16.9 per cent above the same week in 1935, but a decrease of 125,996 cars or 13.2 per cent below the same week in 1930. All commodity classifications except ore showed increases over the preceding week, and all commodity classifications showed increases over last year. The summary, as compiled by the Car Service Division, Association of American Railroads, follows:

Revenue Freight Car Loading

For Week Ended Saturday, September 18			
Districts	1937	1936	1935
Eastern	158,418	155,870	145,740
Allegheny	162,756	159,458	132,283
Pocahontas	57,142	55,394	49,256
Southern	114,142	110,513	101,854
Northwestern	139,862	127,219	112,829
Central Western	125,869	116,491	105,979
Southwestern	68,376	64,912	58,879
Total Western Districts	334,107	308,622	277,687
Total All Roads	826,565	789,857	706,820
Commodities			
Grain and Grain Products	36,180	33,068	42,549
Live Stock	19,033	18,738	18,534
Coal	145,669	136,986	133,079
Coke	10,665	9,856	6,440
Forest Products	39,636	35,452	33,076
Ore	69,021	59,232	37,364
Merchandise L.C.L.	172,639	170,719	165,107
Miscellaneous	333,722	325,806	270,671
September 18	826,565	789,857	706,820
September 11	711,299	700,147	699,786
September 4	804,633	765,131	591,941
August 28	787,373	754,097	680,848
August 21	781,247	735,476	625,774
Cumulative Total, 38 Weeks	31,198,399	25,366,300	22,482,149

In Canada.—Car loadings for the week ended September 18 totaled 61,513, as against 54,849 for the previous week and 52,909 cars for the 37th week last year, according to the compilation of the Dominion Bureau of Statistics.

	Total Cars Loaded	Total Cars Rec'd from Connections
Total for Canada:		
September 18, 1937	61,513	23,729
September 11, 1937	54,849	20,572
September 4, 1937	60,861	22,489
September 12, 1936	52,909	19,427
Cumulative Totals for Canada:		
September 18, 1937	1,823,519	984,944
September 12, 1936	1,669,526	846,522
September 14, 1935	1,604,964	781,077

Western Pacific Opposes Consolidation Plan

The Western Pacific, in a brief filed with the Interstate Commerce Commission on September 28, went on record as opposing the proposal of the Missouri Pacific to consolidate it with the Denver & Rio Grande Western and the Missouri Pacific. It also moved that the commission dismiss a petition of the MOP for leave to intervene in the Western Pacific reorganization case and file a plan providing for the consolidation. The road expressed a desire to continue the "friendly and mu-

tually profitable relations" that have long existed with the MOP, but it asserted that the MOP is not an interested party in the Western Pacific reorganization within the meaning of the Bankruptcy Act.

The road said that it was not willing that its properties, particularly the new and profitable northern California extension, should be appraised for the purpose of a consolidation with or sale to any carrier. Replying to the contention of the MOP that that road had expended $20,000,000 to develop the transcontinental route with Western Pacific and the Denver & Rio Grande Western, the Western Pacific said that the money was not spent in reliance upon the securing of a proprietorship in the Western Pacific, through consolidation or otherwise.

This week brought several replies to the proposed report of the Bureau of Finance of the commission in the Western Pacific reorganization case. All of the parties filing exceptions to the proposed plan of the Bureau strenuously opposed the treatment which had been accorded to them. Exceptions were filed by the following parties: A. C. James Company, Western Pacific, Irving Trust Company, Railroad Credit Corporation, Crocker First National Bank of San Francisco, and a committee composed of Frederick H. Ecker, John W. Stedman, and Reeve Schley, representing as a committee a group of not exceeding 25 bona fide holders of first mortgage bonds.

Labor Rivalries on Pacific Greyhound Lines

The long-standing rivalry between the Brotherhood of Locomotive Firemen and Enginemen and the American Federation of Labor's Amalgamated Association of Street Railway and Motor Coach Employees for the right to become the collective bargaining agency for bus drivers of the Pacific Greyhound Lines, affiliate of the Southern Pacific, was before the National Labor Relations Board again on September 28 when a hearing was held in Washington, D. C., on the motion of Amalgamated for permission to file a closed-shop contract which it signed with Pacific Greyhound on September 7. The Brotherhood of Railroad Trainmen has recently been certified by N. L. R. B. as the exclusive bargaining agency for bus drivers of nine other Greyhound units, as reported in the *Railway Age* of September 25.

The September 7 contract between Pacific and Amalgamated, which was the subject of this week's hearing, was unusual in that it carried the signatures of individual employees. It was, however, received by the Board, which has now to make its findings in the case.

The controversy is of some three years standing but recent phases of it began in December, 1936, when N. L. R. B. issued a cease and desist order against the company for alleged support of a company union. This order of the Board was subsequently upheld in the Circuit Court of Appeals at San Francisco, Calif. On April 20 the B. of L. F. and E. asked Pacific to open negotiations, claiming to represent a majority of Pacific's bus drivers. On the following day, Pacific entered a closed-shop contract with Amalgamated, and the brotherhood filed a petition with N. L. R. B. for an election. Following hearings in July, the trial examiner recommended an election, which, of course, would have the effect of leaving the Amalgamated contract in abeyance. The latter then came through with its September 7 contract bearing signatures of individual workers, and which, like the April 21 contract, covers all employees of the company.

J. Warren Madden, chairman of the N. L. R. B., at this week's hearing expressed the view that it was "extraordinary" that any contract should be granted in view of outstanding orders of the Board. Counsel for the Amalgamated contended, however, that both the April 21 and the September 7 contracts are valid, although he thought that the closed-shop feature was a mistake. B. of L. F. and E. counsel took the position that the Board should certify the brotherhood as the exclusive agency for drivers on the basis of its showing of a majority as of April 20.

Temiskaming Cabooses Embody New Decorative Features

Having a body of vivid red, trucks and end railings painted black, steps and end sills of dark brown, and side grip irons covered with yellow, a group of recently shopped cabooses of the Temiskaming & Northern Ontario, provincially-owned Canadian road, represent a recent wrinkle in railroad equipment "face-lifting." In addition to this combination of vivid and attractive colors, the caboose bodies carry a panel in deep black with white border and lettering bearing the railroad title and car number and a large circular slogan sign in bright yellow with white design and black lettering blazoning forth the suggestion "Ship and Travel by Your Railway."

Canadian Roads' Net Decreases

The Canadian National had net operating revenue in August totaling $558,530, as compared with $680,581 in the same month a year ago. Net for the eight months was $8,185,377, compared with $3,242,824 in the corresponding period of 1936.

Operating revenues in August were $16,485,561, as compared with $15,733,625 in August, 1936. Operating expenses were $15,927,031, against $15,053,044 during the similar period of last year. For the eight months operating revenues were $128,144,860, against $116,491,348 in the corresponding period of last year. Operating expenses were $119,959,483, compared with $113,248,524 for the similar period of 1936.

The Canadian Pacific reports net operating revenues for August at $576,613, compared with $634,484 in the same month last year, while net for the eight months was $9,932,228, a gain of $1,527,643, compared with the net of $8,404,584 in the corresponding period of 1936.

In August operating expenses were slightly lower, at $11,338,316, but gross also showed a decrease of $[illegible]709, at $11,914,929, compared with $12,009,638 in August, 1936, with the result that net for the month showed a decrease of $57,871.

For the eight-month period gross, at $90,746,718, was $5,115,303 higher, while operating expenses also increased by $3,587,660 to $80,814,490, leaving a net of $9,932,228, comparing with $8,404,584 in the corresponding period a year ago.

New Haven Seeks to Curtail Boston Suburban Service

Printed letters signed by the trustees of the New Haven have been placed in the hands of patrons of local passenger trains operated by the Old Colony, a lessor road, between Boston, Mass., and points in southeastern Massachusetts, containing an announcement of the proposed discontinuance of a number of "off-peak" suburban runs and of stops at a selected group of lightly-

This T. & N. O. Caboose Attracts Attention

patronized stations. In defense of the proposed changes, the remainder of the letter analyzes the financial difficulties which force curtailment of service.

The communication first recalls that both the lessor and lessee roads are under the control of trustees in bankruptcy and that the primary duty of such trustees is the elimination of unprofitable operations. It goes on to state that the loss of $2,500,000 (before payment of interest or road rentals), at which the Old Colony was operated for the 12 months ended May 31, was incurred entirely by the operation of local passenger service, asserting that for every $1.00 received in passenger revenue, $1.63 was spent for operating expenses.

Such losses, the letter states, are due in large measure to the loss of traffic to highway carriers. There follows a reprint of the exhibit submitted by the New Haven to the Massachusetts Department of Public Utilities revealing that the number of local passengers on the Old Colony in and out of Boston declined from a total of 30,553,292 in 1923 to 21,093,197 in 1929, and finally to 14,308,555 in 1936.

More complete data as to the financial status of the Old Colony appears in a statement presented recently before the state utility body at a public hearing in Boston by W. W. Meyer, general counsel for the New Haven, which points out that under the terms of a federal court order providing for operation of the Old Colony property by the New Haven trustees, any losses incurred in such operation are to be charged against the former carrier as an advance, to be satisfied prior to the liens of all other indebtedness. It further argues that should the annual operating loss of $2,500,000 continue, the total charges against the Old Colony would seriously affect the values of its outstanding securities.

Of the road's bonds, the statement asserts, Massachusetts savings banks hold 57 per cent and insurance companies 8 per cent of the total outstanding. Further statistics are presented concerning the Boston & Providence, lessor road of the Old Colony, which show that insurance companies of the state hold 10 per cent of the outstanding capital, while 100 per cent of the road's debentures is in the hands of Massachusetts savings banks.

Bridge and Building Association to Meet October 19-21

The program has now been completed for what promises to be one of the most constructive conventions ever held by the American Railway Bridge and Building Association. This convention will be held at the Hotel Stevens, Chicago, on October 19-21. The program is as follows:

TUESDAY, OCTOBER 19

Morning Session

Address by Harry G. Taylor, chairman, Western Association of Railway Executives, Chicago.
Greetings from the American Railway Engineering Association, by F. E. Morrow, vice-president (chief engineer, C. & W. I., Chicago).
Greetings from the Roadmasters and Maintenance of Way Association, by A. H. Peterson, vice-president (roadmaster, C. M. St. P. & P., Chicago).
Address by President E. C. Neville, bridge and building master, C. N., Toronto, Ont.
Report of Committee on Rebuilding Our Bridge and Building Organization to Meet the Demands of the Present Day, Armstrong Chinn, chairman (chief engineer, Alton, Chicago).

Afternoon Session

Report of Committee on The Maintenance of Movable Bridge Spans, J. L. Vogel, chairman (bridge engineer, D. L. & W., Hoboken, N. J.).
Address on Some Reasons Why Bridge and Building Men Are Injured; by S. H. Osborne, assistant to executive vice-president, U. P., Omaha, Neb.
Report of Committee on Taking Up the Deferred Maintenance in Painting, T. P. Soule, chairman (general supervisor of bridges and buildings, N. Y. C., New York).
Adjournment to visit exhibit of the Bridge and Building Supply Men's Association.

TUESDAY EVENING

Address on The Construction of the San Francisco-Oakland Bay Bridge, supplemented by moving pictures; by C. F. Goodrich, chief engineer, American Bridge Company, Pittsburgh, Pa.

WEDNESDAY OCTOBER 20

Morning Session

Report of Committee on Recent Developments in the Construction of Timber Trestles, W. S. Lacher, chairman (managing editor, *Railway Engineering and Maintenance*, Chicago).
Address on The Relationship of the Purchasing and Stores Department to the Bridge and Building Department; by C. E. Smith, vice-president, purchases, N. Y., N. H. & H., New Haven, Conn.
Report of Committee on Protecting Men Against Accidents in the Use of Power Tools, F. H. Cramer, chairman (assistant bridge engineer, C. B. & Q., Chicago).

Luncheon

Address by S. T. Bledsoe, president, A. T. & S. F. System, Chicago.

Afternoon Session

Report of Committee on Practical Measures for the Protection of Bridges and Buildings Against Fire, H. I. Benjamin, chairman (chairman, System Insurance Committee, S. P., San Francisco, Cal.).
Report of Committee on Meeting Today's Demands for Water Service, H. B. Christiansen, chairman (division engineer, C. M. St. P. & P., LaCrosse, Wis.).

QUESTION BOX

Adjournment to visit exhibit of the Bridge and Building Supply Men's Association.

WEDNESDAY EVENING

Annual banquet of the Bridge and Building and the Bridge and Building Supply Men's Associations.

THURSDAY, OCTOBER 21

Morning Session

Report of Committee on The Insulation of Railway Buildings, E. L. Rankin, chairman (architect, G. C. & S. F., Galveston, Tex.).

BUSINESS SESSION

Afternoon

Lunch and inspection of the plant of the Crane Company.

Co-ordination Job Should Start Soon

(*Continued from page 464*)

on many matters, including the formulation of insurance, safety and accounting regulations. Mr. Eastman thinks that in no branch of regulatory work is co-operation more important than "in connection with the protection of the public safety," a field in which "uniformity is of the very essence."

The declaration of policy's reference to co-operation "with any organization of motor carriers," Mr. Eastman called the first "formal, legislative recognition of what I believe to be a basic principle in the public regulation of industry and indeed in the enforcement of law in general." Continuing to observe that "no law can be effective unless it has the support of a dominant public opinion" he asserted that "by the same token no regulation of industry can be wholly successful unless there is in that industry a strong and active element which understands the need for regulation, has faith in the ultimate good to be accomplished, and is not only law-abiding but ready to help to bring to account those who are not so disposed." And Mr. Eastman's experience with the transport industry, "in all its branches," leads him to believe that, while it has "the normal percentage of rascals or otherwise undesirable citizens," it also has "plenty of good citizens who recognize that their business is a part of the public service and try to do their best according to their lights." This law-abiding element, he added, "can dominate the representative organization of an industry, if they care to take the trouble."

"Public regulation of a private industry," the former co-ordinator goes on to say, "is in many ways an anomalous institution. It does not undertake to manage, and yet it undoubtedly interferes with management." Thus it is his view that "good judgment," which is needed to "strike a proper balance between unwise extremes," is, "apart from honesty, the most important ingredient of successful public regulation." Regulatory agencies "must find the golden mean between an autocratic, bureaucratic administration and one that is too lax and yielding."

Referring specifically to the commission's two years of experience in administering the Motor Carrier Act, Mr. Eastman stated that such experience had shown the need for some amendments, which he predicts will be made "in due course." The commission has been "in no wise disappointed" in its expectations that the task of regulating motor carriers would be one "of exceptional difficulty, especially with respect to the trucks." One great difficulty has been "in convincing those who hold the purse strings of the magnitude of the job," Mr. Eastman observes as he leads up to his above-mentioned warning of the danger of the motor carrier regulatory work's "bogging down" because of inadequate funds.

He concedes, however, that some of the congestion is no doubt the fault of the commission and reveals that a review of procedure and methods is now under way "for the purpose of finding out where they are too cumbersome, what short cuts are posssible, and whether the requirements of the law cannot be met in some instances with a less formal and prolonged procedure."

Meetings and Conventions

The following list gives names of secretaries, date of next or regular meetings and places of meetings:

AIR BRAKE ASSOCIATION.—R. P. Ives, Westinghouse Air Brake Co., 350 Fifth Ave., New York, N. Y.

ALLIED RAILWAY SUPPLY ASSOCIATION.—J. F. Gettrust, 1108 New Post Office Bldg., Chicago, Ill. To meet with Car Department Officers' Association, International Railway General Foremen's Association, Master Boiler Makers' Association, and the Railway Fuel and Traveling Engineers' Association.

AMERICAN ASSOCIATION OF FREIGHT TRAFFIC OFFICERS.—W. R. Curtis, F. T. R., M. & O. R. R., Chicago, Ill.

AMERICAN ASSOCIATION OF GENERAL BAGGAGE AGENTS.—E. L. Duncan, 816 McCormick Bldg., Chicago, Ill.

AMERICAN ASSOCIATION OF PASSENGER TRAFFIC OFFICERS.—W. C. Hope, C. R. R. of N. J.,

143 Liberty St., New York, N. Y. Annual meeting, November 8-9, 1937, Hotel Everglades, Miami, Fla.

AMERICAN ASSOCIATION OF RAILROAD SUPERINTENDENTS.—F. O. Whiteman, Union Station, St. Louis, Mo. Annual meeting June 7-9, 1938, The Stevens, Chicago, Ill.

AMERICAN ASSOCIATION OF RAILWAY ADVERTISING AGENTS.—E. A. Abbott, Poole Bros., Inc., 85 W. Harrison St., Chicago, Ill. Annual meeting, January 14-15, 1938.

AMERICAN ASSOCIATION OF SUPERINTENDENTS OF DINING CARS.—F. R. Borger, C. I. & L. Ry., 836 S. Federal St., Chicago, Ill. Annual meeting, October 11-13, 1937, Mayflower Hotel, Washington, D. C.

AMERICAN RAILWAY BRIDGE AND BUILDING ASSOCIATION.—C. A. Lichty, 319 N. Waller Ave., Chicago, Ill. Annual meeting, October 19-21, 1937, The Stevens, Chicago, Ill. Exhibit by Bridge and Building Supply Men's Association.

AMERICAN RAILWAY CAR INSTITUTE.—W. C. Tabbert, 19 Rector St., New York, N. Y.

AMERICAN RAILWAY DEVELOPMENT ASSOCIATION.—E. J. Hoddy, Louisville & Nashville, R. R., Louisville, Ky. Annual meeting, December 2-3, 1937, The Stevens, Chicago, Ill.

AMERICAN RAILWAY ENGINEERING ASSOCIATION.—Works in co-operation with the Association of American Railroads, Engineering Division.—Frank McNellis (Asst. Secy.), 59 E. Van Buren St., Chicago, Ill. Annual meeting, March 15-17, 1938, Palmer House, Chicago, Ill. Exhibit by National Railway Appliances Association, March 14-17, International Amphitheatre, Union Stockyards, Chicago, Ill.

AMERICAN RAILWAY MAGAZINE EDITORS' ASSOCIATION.—M. W. Jones, Baltimore & Ohio R. R., Mt. Royal Station, Baltimore, Md. Fall meeting, October 8-9, 1937, Hotel Peabody, Memphis, Tenn.

AMERICAN RAILWAY TOOL FOREMEN'S ASSOCIATION.—G. G. Macina, C. M., St. P. & P. R. R., 11402 Calumet Ave., Chicago, Ill.

AMERICAN SHORT LINE RAILROAD ASSOCIATION.—R. E. Schindler, Union Trust Bldg., Washington, D. C. Annual meeting, October 18-19, 1937, Blackstone Hotel, Chicago, Ill.

AMERICAN SOCIETY OF MECHANICAL ENGINEERS.—C. E. Davies, 29 West 39th St., New York, N. Y.

Railroad Division.—Marion B. Richardson, 21 Hazel Ave., Livingston, N. J.

AMERICAN TRANSIT ASSOCIATION.—Guy C. Hecker, 292 Madison Ave., New York, N. Y.

AMERICAN WOOD PRESERVERS' ASSOCIATION.—H. L. Dawson, 1427 Eye St., N. W., Washington, D. C. Annual meeting January 25-27, 1938, Congress Hotel, Chicago, Ill.

ASSOCIATION OF AMERICAN RAILROADS.—H. J. Forster, Transportation Bldg., Washington, D. C.

Operations and Maintenance Department.—J. M. Symes, Vice-President, Transportation Bldg., Washington, D. C.

Operating-Transportation Division.—L. R. Knott, 59 E. Van Buren St., Chicago, Ill.

Transportation Section.—L. R. Knott, 59 E. Van Buren St., Chicago, Ill.

Freight Station Section.—L. R. Knott, 59 E. Van Buren St., Chicago, Ill.

Operating Section.—J. C. Caviston, 30 Vesey St., New York, N. Y.

Medical and Surgical Section.—J. C. Caviston, 30 Vesey St., New York, N. Y.

Protective Section.—J. C. Caviston, 30 Vesey St., New York, N. Y.

Safety Section.—J. C. Caviston, 30 Vesey St., New York, N. Y.

Telegraph and Telephone Section—W. A. Fairbanks, 30 Vesey St., New York, N. Y. Annual meeting, Oct. 5-7, 1937, Medinah Club, Chicago, Ill.

Engineering Division.—Frank McNellis (Asst. Secy.), 59 E. Van Buren St., Chicago, Ill. Annual meeting, March 15-17, 1938, Palmer House, Chicago, Ill. Exhibit by National Railway Appliances Association, March 14-17, International Amphitheatre, Union Stockyards, Chicago, Ill.

Construction and Maintenance Section.—Frank McNellis (Asst. Secy.), 59 E. Van Buren St., Chicago, Ill. Annual meeting, March 15-17, 1938, Palmer House, Chicago, Ill.

Electrical Section.—Frank McNellis (Asst. Secy.), 59 E. Van Buren St., Chicago, Ill. Annual meeting, October 27-28, 1937, Hotel Sherman, Chicago, Ill.

Signal Section.—R. H. C. Balliet, 30 Vesey St., New York, N. Y. Annual meeting, April 5-7, 1938, Roosevelt Hotel, New Orleans, La.

Mechanical Division.—V. R. Hawthorne, 59 E. Van Buren St., Chicago, Ill.

Purchases and Stores Division.—W. J. Farrell, 30 Vesey St., New York, N. Y.

Freight Claims Division.—Lewis Pilcher, 59 E. Van Buren St., Chicago, Ill.

Motor Transport Division.—George M. Campbell, Transportation Bldg., Washington, D. C.

Car-Service Division.—C. A. Buch, Transportation Bldg., Washington, D. C.

Finance, Accounting, Taxation and Valuation Department.—E. H. Bunnell, Vice-President, Transportation Bldg., Washington, D. C.

Accounting Division.—E. R. Ford, Transportation Bldg., Washington, D. C. Annual meeting, 1938, Toronto, Ont.

Treasury Division.—E. R. Ford, Transportation Bldg., Washington, D. C. Annual meeting, October 14-15, 1937, Roosevelt Hotel, New Orleans, La.

Traffic Department.—A. F. Cleveland, Vice-President, Transportation Bldg., Washington, D. C.

ASSOCIATION OF RAILWAY CLAIM AGENTS.—F. L. Johnson, Claim Agent, Alton R. R., 340 W. Harrison St., Chicago, Ill. Annual meeting, May 18-20, 1938, Statler Hotel, St. Louis, Mo.

ASSOCIATION OF RAILWAY ELECTRICAL ENGINEERS.—Jos. A. Andreucetti, C. & N. W. Ry., 1519 Daily News Bldg., 400 W. Madison St., Chicago, Ill. Annual meeting, October 27-28, 1937, Hotel Sherman, Chicago, Ill.

BRIDGE AND BUILDING SUPPLY MEN'S ASSOCIATION.—W. S. Carlisle, National Lead Company, 900 W. 18th St., Chicago, Ill. Meets with American Railway Bridge and Building Association.

CANADIAN RAILWAY CLUB.—C. R. Crook, 2271 Wilson Ave., N. D. G., Montreal, Que. Regular meetings, second Monday of each month, except June, July and August, Windsor Hotel, Montreal, Que.

CAR DEPARTMENT OFFICERS' ASSOCIATION.—Frank Kartheiser, (Acting Secy.), C. B. & Q., Chicago, Ill.

CAR FOREMEN'S ASSOCIATION OF CHICAGO.—G. K. Oliver, 2514 W. 55th St., Chicago, Ill. Regular meetings, second Monday of each month, except June, July and August, La Salle Hotel, Chicago, Ill.

CAR FOREMEN'S ASSOCIATION OF ST. LOUIS, MO.—E. G. Bishop, Illinois Central System, East St. Louis, Ill. Regular meetings, third Tuesday of each month except June, July and August, Statler Hotel, St. Louis, Mo.

CENTRAL RAILWAY CLUB OF BUFFALO.—Mrs. M. D. Reed, 1817 Hotel Statler, McKinley Square, Buffalo, N. Y. Regular meetings, second Thursday of each month except June, July and August, Hotel Statler, Buffalo, N. Y.

EASTERN ASSOCIATION OF CAR SERVICE OFFICERS.—J. T. Bougher, 424 W. 33rd St. (11th floor), New York, N. Y.

INTERNATIONAL RAILWAY FUEL ASSOCIATION.—(See Railway Fuel and Traveling Engineers' Association.)

INTERNATIONAL RAILWAY GENERAL FOREMEN'S ASSOCIATION.—F. T. James (President), General Foreman, Delaware, Lackawanna & Western, Kingsland, N. J.

INTERNATIONAL RAILWAY MASTER BLACKSMITHS' ASSOCIATION.—W. J. Mayer, Michigan Central R. R., Detroit, Mich.

MASTER BOILER MAKERS' ASSOCIATION.—A. F. Stiglmeier, 29 Parkwood St., Albany, N. Y.

NATIONAL ASSOCIATION OF RAILROAD AND UTILITIES COMMISSIONERS.—Clyde S. Bailey, 806-808 13th and E Sts., N. W., Washington, D. C. Annual meeting, 1938, New Orleans, La.

NATIONAL RAILWAY APPLIANCES ASSOCIATION.—C. H. White, Room 1826, 208 S. La Salle St., Chicago, Ill. Exhibit at A. R. E. A. Convention, March 14-17, 1938, International Amphitheatre, Union Stockyards, Chicago, Ill.

NEW ENGLAND RAILROAD CLUB.—W. E. Cade, Jr., 683 Atlantic Ave., Boston, Mass. Regular meetings, second Tuesday of each month, except June, July, August and September, Hotel Touraine, Boston, Mass.

NEW YORK RAILROAD CLUB.—D. W. Pye, 30 Church St., New York, N. Y. Regular meetings, third Friday of each month, except June, July, August and September, 29 W. 39th St., New York, N. Y.

PACIFIC RAILWAY CLUB.—William S. Wollner, P. O. Box 3275, San Francisco, Cal. Regular meetings, second Thursday of each month, alternately at San Francisco and Oakland except June at Los Angeles and October at Sacramento.

RAILWAY BUSINESS ASSOCIATION.—P. H. Middleton, First National Bank Bldg., Chicago, Ill. Annual dinner November 18, 1937, The Stevens, Chicago, Ill.

RAILWAY CLUB OF PITTSBURGH.—J. D. Conway, 1941 Oliver Bldg., Pittsburgh, Pa. Regular meetings, fourth Thursday of each month, except June, July and August, Fort Pitt Hotel, Pittsburgh, Pa.

RAILWAY ELECTRICAL SUPPLY MANUFACTURERS' ASSOCIATION.—J. McC. Price, Allen-Bradley Company, 600 W. Jackson Blvd., Chicago, Ill.

RAILWAY FIRE PROTECTION ASSOCIATION.—P. A. Bissell, 40 Broad St., Boston, Mass. Annual meeting, October 19-20, 1937, Hotel Cleveland, Cleveland, Ohio.

RAILWAY FUEL AND TRAVELING ENGINEERS' ASSOCIATION.—T. Duff Smith, 1255 Old Colony Bldg., Chicago, Ill.

RAILWAY SUPPLY MANUFACTURERS' ASSOCIATION.—J. D. Conway, 1941 Oliver Bldg., Pittsburgh, Pa. To meet with Mechanical Division and Purchases and Stores Division, Association of American Railroads.

RAILWAY TELEGRAPH AND TELEPHONE APPLIANCE ASSOCIATION.—G. A. Nelson, Waterbury Battery Company, 30 Church St., New York, N. Y. Meets with Telegraph and Telephone Section of A. A. R.

RAILWAY TIE ASSOCIATION.—Roy M. Edmonds, 903 Syndicate Trust Bldg., St. Louis, Mo.

ROADMASTERS' AND MAINTENANCE OF WAY ASSOCIATION.—C. A. Lichty, 319 N. Waller Ave., Chicago, Ill.

SIGNAL APPLIANCE ASSOCIATION.—G. A. Nelson, Waterbury Battery Company, 30 Church St., New York, N. Y. Meets with A. A. R., Signal Section.

SOCIETY OF OFFICERS, UNITED ASSOCIATIONS OF RAILROAD VETERANS.—M. W. Jones, Baltimore & Ohio, Mt. Royal Station, Baltimore, Md. Annual meeting October 9-10, 1937, Hotel Richmond, Richmond, Va.

SOUTHERN AND SOUTHWESTERN RAILWAY CLUB.—A. T. Miller, 4 Hunter St., S. E., Atlanta, Ga. Regular meetings, third Thursday in January, March, May, July, September and November, Ansley Hotel, Atlanta, Ga.

SOUTHERN ASSOCIATION OF CAR SERVICE OFFICERS.—D. W. Brantley, C. of Ga. Ry., Savannah, Ga. Annual meeting, January 27, 1938, Birmingham, Ala.

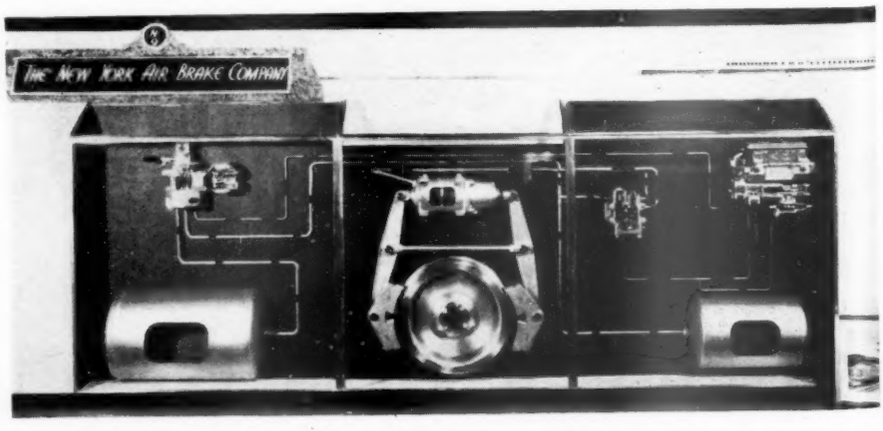
TOOL FOREMEN SUPPLIERS' ASSOCIATION.—H. W. Leighton (President), H. W. Leighton Company, 565 W. Washington St., Chicago, Ill. Meets with American Railway Tool Foremen's Association.

TORONTO RAILWAY CLUB.—D. M. George, P. O. Box 8, Terminal "A," Toronto, Ont. Regular meetings, fourth Monday of each month, except June, July and August, Royal York Hotel, Toronto, Ont.

TRACK SUPPLY ASSOCIATION.—Lewis Thomas, O. & C. Company, 59 E. Van Buren St., Chicago, Ill. Meets with Roadmasters' and Maintenance of Way Association.

TRAVELING ENGINEERS' ASSOCIATION.—(See Railway Fuel and Traveling Engineers' Association.)

WESTERN RAILWAY CLUB.—C. L. Emerson, C. M., St. P. & P., Chicago, Ill. Regular meetings, third Monday of each month, except June, July, August and September, Hotel Sherman, Chicago, Ill.

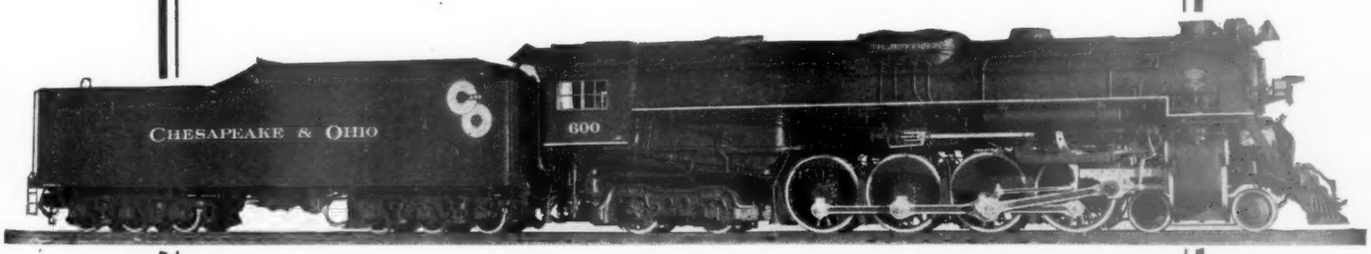


A High-Speed Train Brake Working Model Recently Installed at the N. Y. Museum of Science & Industry. (Described in the *Railway Age* of September 25, page 431.)

Continued on next left-hand page

NET!

There is but one true measure of locomotive effectiveness—the net return after all charges, including maintenance, have been deducted from gross earnings . . . Modern Power, designed for the service in which it is to operate, assures greater net returns from every train it hauls.



LIMA LOCOMOTIVE WORKS, INCORPORATED
LIMA, OHIO

LIMA
LOCOMOTIVE WORKS
INCORPORATED

Supply Trade

Baldwin Enlarges Working Capital

The federal court in Philadelphia has granted permission to the Baldwin Locomotive Works, recently reorganized, to increase its borrowing capacity from $3,000,000 to $5,000,000 to meet needs for working capital arising from increasing production.

Victor M. Drury, member of the executive committee and a director of the **Canadian Car & Foundry Company Limited,** Montreal, Que., has been elected president of the company.

W. C. Reid, midwestern manager at Chicago of the **Metallizing Engineering Company, Inc.,** has been appointed vice-president in charge of sales, and will have his headquarters at the main office in New York City on or before November 1. **Walter B. Meyer,** manager of the St. Louis, Mo., office, has been appointed manager of the Chicago office, and **Alan B. Geuder,** connected with the Chicago office as a salesman, will take over Mr. Meyer's duties in St. Louis.

John May, general manager of sales of the **American Steel & Wire Company,**

John May

Cleveland, Ohio, has been elected vice-president in charge of sales to succeed **Dennis A. Merriman,** retired. Mr. May was born in Rockland, Me., and graduated from the University of Maine in 1905. From that year until 1908 he was employed in the engineering department of the New York Telephone Company and in February, 1909, entered the employ of the American Steel & Wire Company as a correspondent in the order department in the New York office. In May of the same year he was transferred to Worcester, Mass., as assistant to the educational director and in October returned to New York as correspondent in the electrical and wire rope sales division. In May, 1910, he was made a salesman in the electrical and wire rope sales division, which position he held until January, 1918, when he was promoted to assistant manager of sales. He held the latter position until 1922, when he was appointed manager of electrical and wire rope sales. In March, 1931, he was promoted to assistant general manager of sales of the company and in March, 1937, to general manager of sales, which position he has held until his recent promotion.

Mr. Merriman started his career in the

D. A. Merriman

steel business with the Ludlow-Saylor Wire Company, St. Louis, Mo. He resigned as secretary of that company to become manager of the Consolidated Steel & Wire Company, St. Louis. Later he resigned to become president of the Puget Sound Steel & Wire Company, Seattle, Wash., and when this company was acquired by the American Steel & Wire Company in 1902, Mr. Merriman became assistant general sales manager of the American Steel & Wire Company at Chicago. In January, 1926, he was promoted to general manager of sales and in April, 1928, to vice-president, the position he was holding at the time of his retirement.

Gustav Laub, general manager of sales, of the **Vanadium Corporation of America,** New York, has been appointed assistant vice-president and general manager of sales. Mr. Laub is a graduate of the University of Pittsburgh. He became associated with the American Vanadium Corporation, Pittsburgh, Pa., in 1916. Af-

Gustav Laub

ter this organization was absorbed by the Vanadium Corporation of America in 1920, he was transferred to the Primos Chemical Company, another Vanadium acquisition, and was later placed in charge of mining properties of the corporation in Colorado. In 1921, he went to the New York office of the Vanadium Corporation of America, and subsequently served as assistant secretary, and assistant general manager of sales. He became general manager of sales in 1931.

C. M. Burpee has resigned as vice-president of the **Chipman Chemical Company,** with headquarters at Chicago, to return to his former position as research engineer of the Delaware & Hudson at Albany, N. Y., effective October 1.

The Linde Air Products Company, unit of **Union Carbide and Carbon Corporation,** has moved its Boston, Mass., district office to 441 Stuart street. About November 1, the Linde office, now located at the Speedway plant, outside Indianapolis, Ind., will be transferred to a new building at 729 North Pennsylvania street, Indianapolis. The latter office will serve the territory extending from Louisville, Ky., north to South Bend, Ind., and from Columbus, Ohio, and Cincinnati westward to Illinois.

The Texas Company, New York, has made the following appointments in its railway traffic and sales department: **W. E. Greenwood** has been appointed general manager, **Charles Ervin** has been appointed traffic manager, and **J. L. Lavallee** has been appointed sales manager, all with headquarters in the Chrysler building, New York. **J. M. P. McCraven** has been appointed district manager, railway sales division. **Edward Wegner** has been appointed assistant district manager, railway sales division, both with headquarters in the McCormick building, Chicago, and **A. W. Larsen** has been appointed assistant district manager, railway sales division, with headquarters at 1218 Olive street, St. Louis, Mo.

Construction

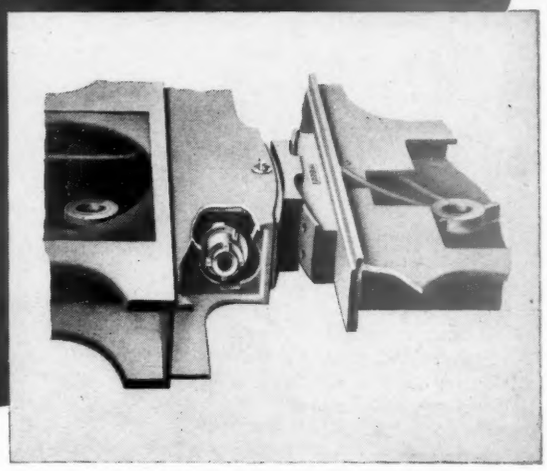
CHICAGO & NORTH WESTERN.—The Iowa State Highway Commission has awarded a contract to Ben Cole & Sons, Ames, Iowa, for the construction of two underpasses, one carrying Grand avenue under the main line and three other tracks of this company and the other carrying Grand avenue under a branch line of the company, at a total cost of about $280,000.

LOUISVILLE & NASHVILLE.—Bids will be received by this company on October 4 for the construction of a one-story building at Plum street, Cincinnati, Ohio, which will be used for the protection of perishables during cold weather. The structure, which will be 63 ft. by 463 ft. in plan, will be of concrete construction with steel trusses supporting the roof, and will be carried on a pile foundation.

WABASH.—A contract has been awarded to the Ross & White Company, Chicago, for furnishing an automatic, electric engine coaler for installation at Peru, Ind.

Continued on next left-hand page

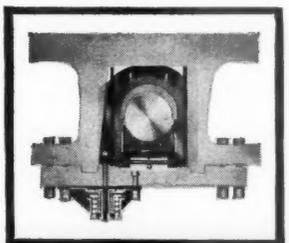
"Engineered for Easy riding"



The Type E-2 Radial Buffer makes for safer and easier locomotive riding.

Its spherical and cylindrical faces permit movement in any direction, while its predetermined frictional resistance dampens all oscillation between engine and tender and avoids all lost motion and subsequent destructive shocks to drawbar and pins.

Its twin, the Franklin Automatic Compensator and Snubber, takes the job of maintaining proper driving box adjustment and further improves smoothness of operation, extends locomotive mileage and reduces maintenance costs.



FRANKLIN AUTOMATIC COMPENSATOR AND SNUBBER

When maintenance is required, a replacement part assumes importance equal to that of the device itself and should be purchased with equal care. Use only genuine Franklin repair parts in Franklin equipment.

REG. U.S. PAT. OFF.

FRANKLIN RAILWAY SUPPLY CO., INC.

NEW YORK CHICAGO MONTREAL

Equipment and Supplies

LOCOMOTIVES

THE PENNSYLVANIA has ordered one 600-hp. Diesel-electric locomotive from the Electro-Motive Corporation.

THE WESTINGHOUSE AIR BRAKE COMPANY is inquiring for one 0-4-0 type switching locomotive.

THE CENTRAL OF BRAZIL is inquiring for a number of locomotives. Mario Castilhos Do Espirito Santo is locomotive engineer, Praca da Republica, Rio de Janeiro, Brazil.

FREIGHT CARS

THE ILLINOIS CENTRAL has leased 1,000 hopper cars from the General American Transportation Corporation.

PASSENGER CARS

THE ATCHISON, TOPEKA & SANTA FE is inquiring for 37 passenger cars, including 17 coaches and 20 baggage cars.

IRON AND STEEL

THE DENVER & RIO GRANDE WESTERN has ordered 13,400 tons of 131-lb. and 112-lb. rail from the Colorado Fuel & Iron Corp.

THE NEW YORK CENTRAL has placed orders for 5,000 tons of 127-lb. Dudley section rail. The orders were divided among the following companies: Bethlehem Steel Company, 2,000 tons; Carnegie-Illinois Steel Corporation, 2,500 tons, and Inland Steel Company, 500 tons.

MISCELLANEOUS

THE DENVER & RIO GRANDE WESTERN has asked the district court for permission to spend $1,892,442 for rails, roadway machinery, shop machinery and tools. An order for 14,000 tons of rails and fastenings costing $1,245,527 has been placed with the Colorado Fuel and Iron Company subject to court approval. Cast steel truck frames and the replacing of old style arch bar trucks on 1,579 freight cars will cost $312,642. New shop machinery and tools for company shops at Burnham, Salt Lake City, Pueblo and Grand Junction will cost $263,989. Roadway machinery, including section motor cars, rail laying and track maintenance machines will cost $59,865. Miscellaneous work equipment will cost $10,419.

ALL EMPLOYEES OF THE Victorian Government Railway (Australia) have been granted a 44-hour week, effective January 1, 1938, by a recent ruling of the Arbitration Court of the commonwealth. At present only 9,700 employees work 44 hours a week, while 13,200 work 48 hours a week or more. The ruling has been made in part to equalize the Victorian system with other Australian roads.

Financial

ATCHISON, TOPEKA & SANTA FE.—*Abandonment.*—The Gulf, Colorado & Santa Fe has applied to the Interstate Commerce Commission for authority to abandon its 11.7-mi. line from Ladonia, Tex., to Honey Grove.

CAMBRIA & INDIANA.—*Equipment Trust Certificates.*—This road has applied to the Interstate Commerce Commission for authority to assume liability for $1,300,000 of 2¾ per cent equipment trust certificates, series H. The road proposes to invite bids for the issue, which will mature $130,000 on October 1 of each year, 1938 to 1947.

CHICAGO & NORTH WESTERN.—*Abandonment.*—The Interstate Commerce Commission, Division 4, has authorized the trustee to abandon the branch line extending from Boyer, Iowa, to Deloit, 7.7 miles.

CHICAGO GREAT WESTERN.—*Reorganization.*—The Interstate Commerce Commission, Division 4, has postponed from September 30, to October 13, the date of the hearing on the reorganization of this company.

CHICAGO, MILWAUKEE, ST. PAUL & PACIFIC. — *Reorganization.* — The Interstate Commerce Commission, Division 4, has reopened the reorganization proceedings of this company and has assigned February 1, 1938, as the date for further hearings. The division acted upon the petition of the group of institutional investors who told the division that it would prepare a new plan of reorganization. Last week, Commissioner Porter ordered the hearings closed due to the fact that no plan was before the commission, nor any assurance of any being filed in the near future. The order also stipulates that any plan that is to be filed must be in the hands of the commission by January 10, 1938.

CHICAGO, ROCK ISLAND & PACIFIC.—*Certificates of Indebtedness.*—The Interstate Commerce Commission, Division 4, has authorized the trustees to issue $28,172,650 of 10-year secured 3½ per cent certificates of indebtedness to be exchanged for a like principal amount of outstanding equipment trust certificates of this company.

DENVER & RIO GRANDE WESTERN.—*Abandonment.*—The Interstate Commerce Commission, Division 4, has authorized the trustees to abandon the so-called Westcliffe branch extending from Texas Creek, Colo., to Westcliffe, 25.5 miles.

GRAND TRUNK WESTERN. — *Trackage Rights and Joint Operation.*—The Interstate Commerce Commission, Division 4, has authorized this company to operate, under trackage rights, over a line of railroad of the Michigan Central, New York Central lessee, extending from a connection of the tracks of the Grand Trunk Western with those of the Michigan Central near the intersection of Meredith and Baum streets, Saginaw, Mich., thence across the Michigan Central's bridge over the Saginaw river, and thence to a point of connection of the tracks of the Grand Trunk Western and those of the Michigan Central between Elsworth and Oak, 1.5 miles. The commission has also authorized this company to jointly use the Michigan Central's Genesee street passenger station and station grounds in Saginaw.

MINNEAPOLIS & ST. LOUIS.—*Abandonment.*—Examiner J. S. Prichard, of the Interstate Commerce Commission, in a proposed report to the commission, has recommended that it authorize the co-receivers to abandon a line extending from Otho, Iowa, to Berkeley, 36.3 miles.

MISSOURI PACIFIC. — *Reorganization.* — The Interstate Commerce Commission, Division 4, has approved the payment of $12,000 as maximum compensation for legal services rendered by Fred L. Williams and Fred L. English, as special counsel for the trustees. The commission also approved the sum of $619 as payment for expenses incurred by these men.

The Interstate Commerce Commission, Division 4, has approved as reasonable the payment of $4,000 to Ernest A. Green and Jerome N. Frank, jointly for legal services in connection with the reorganization proceedings of this company.

NEW YORK CENTRAL.—*Abandonment.*—This company has applied to the Interstate Commerce Commission for authority to abandon a line extending from Suspension Bridge, N. Y., to Lewiston, 5.2 miles.

NEW YORK, NEW HAVEN & HARTFORD.—*Abandonment Application Withdrawn.*—This road has withdrawn its application to the Interstate Commerce Commission for authority to abandon the 3.91-mi. line from Windsor Locks, Conn., to Suffield. The withdrawal petition states that negotiations with "interested parties" have prompted the New Haven to continue operating the line so long as revenues from it do not fall "appreciably" below the 1936 level, and there is no "unusual" rise in operating expenses.

SOUTHERN PACIFIC. — *Abandonment.* — The Interstate Commerce Commission, Division 4, has authorized the abandonment of the line extending from Crump, Calif., to LeRoy, 2.1 miles.

TEXAS & PACIFIC.—*Abandonment.*—This company has applied to the Interstate Commerce Commission for authority to abandon operation over certain lines of the Texas & New Orleans and the Kansas City Southern in Shreveport, La., 2.2 miles.

TEXAS & PACIFIC.—*Equipment Trust Certificates.*—This company has applied to the Interstate Commerce Commission for authority to assume liability for $1,275,000 of 2¾ per cent equipment trust certificates, maturing in equal annual installments on November 1, in each of the years from 1938 to 1952.

WILKES-BARRE & EASTON.—*Abandonment.*—This company has applied to the Interstate Commerce Commission for au-

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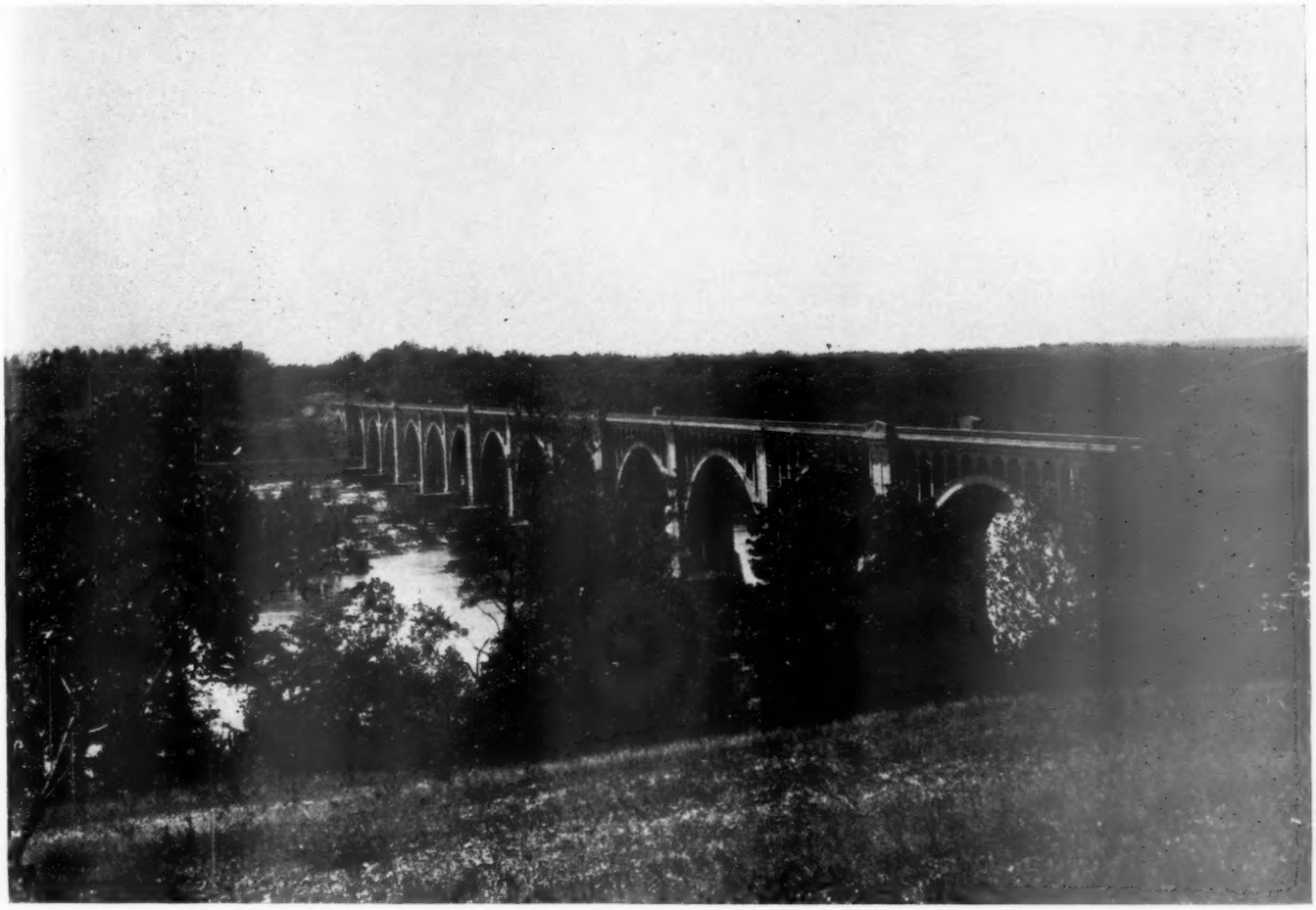
NO. 34 OF A SERIES OF FAMOUS ARCHES OF THE WORLD



JAMES RIVER ARCH BRIDGE

RICHMOND, VA.

Located a few miles above Richmond, Virginia, is the concrete arch bridge of the Belt Line Railway over the James River. This bridge is 92 feet above main water level, its main spans are 116 feet long and the shore spans, 122 feet. Over 42,357 cubic yards of concrete and more than 1,500,000 pounds of re-inforcing steel were used in its construction. The cost was financed jointly by the Atlantic Coast Line and the Richmond, Fredericksburg and Potomac Railways.

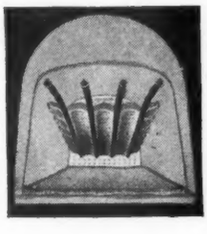
* * *

The Security Sectional Arch design is the result of long experience and careful study by the American Arch Company engineers. Its development paralleled locomotive development. Today it is an essential factor in the successful operation of high speed, high capacity trains.

THERE'S MORE TO SECURITY ARCHES THAN JUST BRICK

HARBISON-WALKER REFRACTORIES CO.

Refractory Specialists



AMERICAN ARCH CO.
INCORPORATED

Locomotive Combustion Specialists

thority to abandon its line extending from Stroudsburg, Pa., to Suscon, 54 miles.

WHARTON & NORTHERN.—*Abandonment.*—The Interstate Commerce Commission, Division 4, has authorized this company to abandon a branch line extending from Wharton Junction, N. J., to Wharton Station, 1.2 miles.

Average Prices of Stocks and Bonds

	Sept. 28	Last week	Last year
Average price of 20 representative railway stocks..	40.10	41.61	55.71
Average price of 20 representative railway bonds..	73.73	75.86	83.13

Dividends Declared

Carolina, Clinchfield & Ohio.—$1.00, quarterly; Stamped Certificates, $1.25, quarterly, both payable October 20 to holders of record October 9.

Cleveland, Cincinnati, Chicago & St. Louis.—Preferred, $1.25, payable October 30 to holders of record October 7.

Norfolk & Western.—Preferred, $1.00, quarterly, payable November 19 to holders of record October 30.

Pere Marquette.—Prior Preferred, $10 (Accumulated Dividends); Prior Preferred, $1.25, quarterly, both payable November 1 to holders of record October 8.

Reading.—50c, quarterly, payable November 11 to holders of record October 14.

Railway Officers

EXECUTIVE

Henry Shearer, vice-president and general manager of the Michigan Central, with headquarters at Detroit, Mich., has retired after 45 years of service with this road. Mr. Shearer has been connected with the operating and traffic departments of the Michigan Central continuously since he obtained his first railroad experience on June 6, 1892, as a bill clerk at Matteson, Ill. He was born at Galien, Mich., on

Henry Shearer

March 1, 1868, attended high school, and after serving the Michigan Central for a year as a bill clerk was advanced to agent at Porter, Ind. Later he was transferred to Chicago Heights, Ill., and to Michigan City, Ind., and in November, 1899, he became traveling freight agent at Chicago, then advancing to chief clerk in the general freight department at Chicago. In 1902 Mr. Shearer was appointed agent at Jackson, Mich., where he remained until the following year, when he was appointed chief clerk to the general manager at Detroit. After six years in the latter position he was promoted to division superintendent at St. Thomas, Ont., on October 1, 1909, where he remained until December, 1912, when he was advanced to assistant to the general manager at Detroit. He was promoted to assistant general superintendnt in February, 1913, to general superintendent in September, 1916, and to general manager in March, 1920, all with headquarters at Detroit. In July, 1923, he was given the added title of assistant vice-president, a position he retained, along with that of general manager, until his election to vice-president and general manager in September, 1930.

Leslie H. Woodall, who has been appointed assistant to the vice-president of the Southern, with jurisdiction over loss and damage freight claims and freight claim prevention, as reported in the September 25 issue of the *Railway Age,* has spent his entire railway career of 38 years with the Southern. He was born on October 11, 1881, at Woodville, Ala., and entered the service of the Southern in March, 1899, as an extra operator on the Memphis division. Subsequently Mr. Woodall served as a clerk in the local freight office at Birmingham, Ala., as a brakeman on the Memphis division, as extra agent and operator on the same division, as agent at Florence, Ala., and as joint agent at Corinth, Miss. In 1912, he was appointed inspector of agencies on the Memphis division and in the following year he was promoted to train dispatcher, with headquarters at Sheffield, Ala. In 1915, Mr. Woodall became general yardmaster at Sheffield, being appointed trainmaster at the same point in 1917. In the following year he became terminal trainmaster at Sheffield and in 1919 he was appointed trainmaster on the Memphis division, being promoted to superintendent of terminals at Jacksonville, Fla., in May, 1920. Later in the same year he returned to the Memphis division as superintendent, holding this position at various points until 1934, when he was advanced to general superintendent with headquarters at Birmingham. Later in the same year, following a reorganization of the operating department, Mr. Woodall was appointed general manager of the Western lines, with headquarters at Birmingham, later being transferred to St. Louis, Mo., where he was located at the time of his recent appointment as assistant to the vice-president, effective October 1.

FINANCIAL, LEGAL AND ACCOUNTING

James Stoddart, land agent for the Great Northern, with headquarters at St. Paul, Minn., and the oldest employee of this railroad in years of service, retired on October 1 at the age of 75 years. Mr. Stoddart had been in the service of the Great Northern for more than 55 years.

R. M. Hogin, comptroller of the Atchison, Topeka & Santa Fe, with headquarters at New York, has been appointed also assistant secretary to succeed **Walter Ely,** resigned. **C. K. Cooper,** assistant treasurer, has also resigned.

A. L. Wynn, assistant general claim agent of the Chicago & North Western, has been promoted to general claim agent with headquarters as before at Chicago, succeeding **Frank Wenter, Jr.,** deceased.

OPERATING

F. A. Pouliot has been appointed chief dispatcher of the Laurentian division of the Canadian Pacific, succeeding **A. H. Buchanan,** who has been transferred in the same capacity to the Smiths Falls division, to succeed **W. H. Cavers,** transferred.

John H. Fish, who has been promoted to superintendent of the Louisville & Nashville, with headquarters at Evansville, Ind., was born at Fountain Head, Tenn., on January 11, 1882, and entered railway service on August 20, 1898, as a telegraph

John H. Fish

operator on the Second division of the Louisville & Nashville at Nashville, Tenn. In 1902 he was promoted to dispatcher of the Nashville division and in August, 1904, was transferred to the Atlanta division at Blue Ridge, Ga. Two years later he was promoted to chief dispatcher of this division, with headquarters at Marietta, Ga., which position he held until March 1, 1911, when he was made night chief dispatcher of the Henderson division at Earlington, Ky. On January 1, 1912, he was made chief dispatcher of this division with the same headquarters and on October 1, 1914, was promoted to assistant trainmaster with the same headquarters. He held the latter position until March 15, 1918, when he was promoted to trainmaster of this division, with headquarters at Evansville, Ind. On April 22, 1929, he was promoted to assistant superintendent with the same headquarters, which position he held until September 15, 1937, when he was promoted to superintendent.

A. D. Mims, assistant general manager of the Texas lines of the Southern Pacific (in Texas and Louisiana), at Houston, Tex., has had his jurisdiction extend-

Continued on next left-hand page

Factors that BETTER Locomotive Performance

HIGH DEGREES OF SUPERHEAT - The accompanying tabulation shows the increase in locomotive efficiency as the degree of superheat increases. Type "E" superheaters provide the higher degrees of superheat. The Improved Type "E" superheater design has greatly reduced maintenance cost by extending the return bends and bifurcates further ahead of the front tubesheet and away from the travel of furnace gases and flying cinders.

Steam Temperature	*Steam per I.HP.HR.*	*Saving in Steam From the Use of Superheat*
Saturated Steam	28 lb.	
150° Superheat	21 lb.	25.0%
200° "	18 lb.	35.6%
250° "	16 lb.	43.0%
350° "	14 lb.	50.0%

DRY STEAM FROM THE BOILER - For each 1% of moisture that is carried over into the superheater with the steam, there is a drop of about 17 degrees in superheat. The Elesco tangential steam dryer effectively separates moisture from the steam and will handle as much as 20% of moisture in the steam at an efficiency of better than 80%. The steam inlet is located at the highest point in the dome and is unobstructed and non-cloggable. It is easy to install, has no moving parts, and has a minimum pressure drop.

FEED WATER HEATING BY EXHAUST STEAM - The application of Elesco feed water heating equipment to your locomotives, of either the single stage injector type, or the closed type equipped with one pump, will substantially increase the evaporative capacity of your boiler. Both types are dependable and have been widely applied to locomotives throughout the world; each type satisfying certain conditions or preferences. Both types use waste exhaust steam, which results in a fuel saving of 8%—15% or a corresponding increase in horsepower. The operation of the Improved Elesco exhaust steam injector is both stable and efficient with feed water temperatures up to 105 deg. F. and boiler pressures up to 300 lb.

A QUICK AND SMOOTH ACTING THROTTLE - Locomotives today require a quick and smooth acting throttle. The American multiple-valve throttle, located in the front end, provides an instant and smooth control over the movements of the locomotive. As it is built within the superheater header, there is an economy of flanged steam joints and weight, and space. The small valves do not warp and assure a tight throttle. The great majority of new locomotives are equipped with American multiple-valve throttles.

ELESCO

A 1175

THE SUPERHEATER COMPANY

Representative of AMERICAN THROTTLE COMPANY, INC.

60 East 42nd Street, NEW YORK Peoples Gas Building, CHICAGO

Canada: THE SUPERHEATER COMPANY, LTD., MONTREAL

Superheaters « Exhaust Steam Injectors « Feed Water Heaters « American Throttles « Pyrometers « Steam Dryers

ed to include the lines in Louisiana. **R. M. Glover,** superintendent of the Lafayette division, with headquarters at Lafayette, La., has had his jurisdiction extended to include the New Orleans Terminals.

TRAFFIC

J. L. Cahill, commercial agent on the Grand Trunk at Saginaw, Mich., has had his title changed to general agent.

A. J. Ayre has been appointed general eastern agent of the Pittsburgh & West Virginia, with headquarters at New York, succeeding **George Zabriskie,** resigned.

E. R. Morris, general freight agent of the New York, Ontario & Western, has been appointed assistant freight traffic manager, with headquarters at New York.

W. M. Kirkpatrick, city freight agent for the Denver & Rio Grande Western at Denver, Colo., has been appointed general agent at Portland, Ore., succeeding **W. C. McBride,** who has retired.

G. U. Yager, general agent passenger department for the Louisville & Nashville at Chicago, has been appointed to the newly-created position of assistant general passenger agent, with headquarters at Louisville, Ky. **F. C. Cowherd,** assistant to the general passenger agent at Louisville, has been promoted to general agent passenger department at Chicago, to succeed Mr. Yager.

Robert T. McSweeney, export and import agent of the Chicago, Milwaukee, St. Paul & Pacific, has been appointed oriental traffic manager, with headquarters as before in Chicago, succeeding **G. E. Stolp,** whose death is noted elsewhere in these columns.

R. T. Oliver, commercial agent on the Missouri Pacific at Birmingham, Ala., has been promoted to general agent with headquarters at Winston-Salem, N. C., succeeding **J. A. Fetz,** who has been transferred to Phoenix, Ariz., where he replaces **W. H. A. Turner.** Mr. Turner has been appointed division freight and passenger agent with headquarters at Texarkana, Ark., succeeding **W. R. Huhner,** who has been transferred to Monroe, La., where he replaces **E. G. Waring,** who has resigned.

SPECIAL

John C. Emery has been appointed special representative of the Railway Express Agency, with headquarters at Chicago, reporting to the president. Mr. Emery will devote his attention particularly to the development of the various accessorial services, such as pick-up, delivery and transfer of merchandise freight and baggage, which the agency performs for the railroads, and other duties as may be assigned. Mr. Emery was born in Kansas City, Mo., on July 19, 1902. He was educated in the public and high schools of Kansas City and at the University of Wisconsin. After several years in the operating and traffic departments of the Alton and Canadian Pacific, he was for 13 years associate editor and motor transport editor of *Railway Age*. In 1935, he was appointed co-director of passenger and merchandise service for the federal

John C. Emery

co-ordinator of transportation in Washington, D. C. He has been associated with the Railway Express Agency since March 1, 1937, in connection with special assignments.

MECHANICAL

Lester H. Kueck, assistant chief mechanical engineer of the Missouri Pacific,

Lester H. Kueck

who has been promoted to chief mechanical engineer, as reported in the *Railway Age* of September 25, has been identified with this company for 20 years. He was born on July 20, 1895, at Sedalia, Mo., and entered the service of the Missouri Pacific on April 1, 1917, as a general draftsman. From September 21, 1920, to February 15, 1924, Mr. Kueck served as a general draftsman on the Texas & Pacific (controlled by the Missouri Pacific) at Marshall, Tex. At the end of this period he returned to the Missouri Pacific as a general draftsman at St. Louis, holding this position until February 2, 1926, when he was advanced to chief draftsman. On September 1, 1935, Mr. Kueck was promoted to assistant chief mechanical engineer, the position he was holding at the time of his recent appointment.

R. B. Hunt, master mechanic of the Florida East Coast, has been appointed acting superintendent of motive power and machinery, with headquarters as before at St. Augustine, Fla., succeeding **F. S. Robbins,** who has resigned to become superintendent motive power of the Atlantic Coast Line.

OBITUARY

F. S. Pooler, who retired in 1930 as tie agent for the Chicago, Milwaukee, St. Paul & Pacific, died on September 23 at Auburndale, Fla., at the age of 81 years.

George Whiteley, superintendent of the motive power and car department of the Canadian Pacific, with headquarters at Toronto, Ont., died on September 29.

G. E. Stolp, oriental traffic manager of the Chicago, Milwaukee, St. Paul & Pacific, with headquarters at Chicago, died on September 22 at Tomahawk, Wis., at the age of 67 years.

C. O. Davenport, master mechanic of the Chicago, Burlington & Quincy, with headquarters at Casper, Wyo., died suddenly of a heart attack on September 20 while standing on the station platform at Casper.

Ellsworth Woodward, general traffic manager of the Alton & Southern and the Bauxite & Northern, with headquarters at St. Louis, Mo., died on September 27 at St. Elizabeth's Hospital at Belleville, Ill., where he had been ill for a week.

Edmund Deschenes, vice-president and manager of the Central Vermont, with headquarters at St. Albans, Vt., died there on September 28, after a long illness. He was 59 years old. Mr. Deschenes' entire railroad career, with the exception of one year when he served as assistant to the chairman and president of the Canadian National, was with the Central Vermont, with which company he served successively since 1895 as office boy, junior clerk, clerk, traveling auditor, relief agent and auditor. He served as manager and comptroller of the road since 1931. Mr. Deschenes was also a director of the Central Vermont Railway, Inc., and its subsidiary compa-

Edmund Deschenes

nies and was vice-president in charge of all company subsidiaries, including the Central Vermont Transportation Co., and the Central Vermont Airways, Inc.

Table of Freight Operating Statistics appears on next left-hand page

LESS STOCK TO REMOVE

IN other words, HUNT-SPILLER *Air Furnace* GUN IRON Castings contain a minimum amount of waste material.

Perfect metallurgical control and foundry practice permits manufacture very close to finished sizes. Less stock has to be removed and cost of machining is greatly reduced. This feature and H S G I resistance to wear assure savings in the material required to maintain your power.

H S G I
Reg. U. S. Trade Mark
Cylinder Bushings
Cylinder Packing Rings
Pistons or Piston Bull Rings
Valve Bushings
Valve Packing Rings
Valve Bull Rings
Crosshead Shoes
Hub Liners
Shoes and Wedges
Floating Rod Bushings
Parts Finished For Application
Dunbar Sectional Type Packing
Duplex Sectional Type Packing for Cylinders and Valves
(Duplex Springs for Above Sectional Packing)
Cylinder Snap Rings
Valve Rings All Shapes

HUNT-SPILLER MFG. CORPORATION
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International Rwy. Supply Co., 30 Church Street, New York, N. Y.

HUNT-SPILLER GUN IRON
Air Furnace

Freight Operating Statistics of Large Steam Railways—Selected Items for the Month of July,

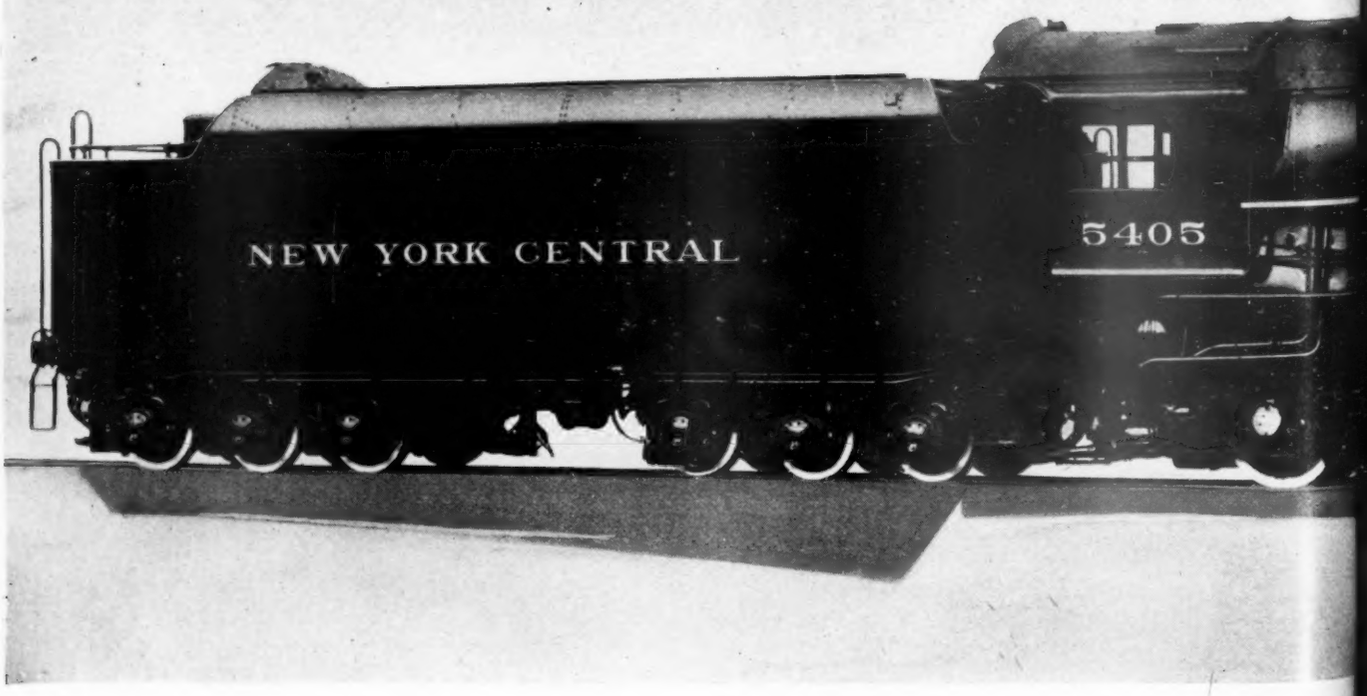
Region, road, and year	Miles of road operated	Train-miles	Locomotive-miles: Principal and helper	Locomotive-miles: Light	Car-miles: Loaded (*thousands*)	Car-miles: Per cent loaded	Ton-miles (*thousands*): Gross, excluding locomotives and tenders	Ton-miles (*thousands*): Net, revenue and non-revenue	Number of road locomotives on line: Serviceable: Not stored	Serviceable: Stored	Unserviceable	Per cent unserviceable
New England Region:												
Boston & Albany.....1937	374	138,820	143,520	9,484	3,034	65.9	171,257	60,238	58	12	21	23.0
1936	373	126,901	131,082	8,607	3,026	65.7	161,175	53,298	54	11	27	29.3
Boston & Maine.....1937	1,941	269,871	298,859	23,375	9,433	71.1	500,697	185,098	123	10	123	48.0
1936	1,963	261,575	292,181	27,023	9,193	70.5	491,030	183,416	122	7	166	56.3
N. Y., New Hav. & Hartf.1937	2,011	351,402	427,852	23,786	12,102	68.0	640,038	234,508	190	2	73	28.3
1936	2,011	345,293	415,986	22,333	11,641	65.9	628,189	226,726	169	21	99	34.9
Great Lakes Region:												
Delaware & Hudson.....1937	830	219,154	283,150	30,354	7,479	66.9	446,661	209,224	91	132	43	16.2
1936	831	208,614	279,174	31,318	7,141	66.9	431,886	204,125	104	134	35	12.8
Del. Lack. & Western.....1937	984	356,306	393,213	50,984	11,773	69.2	663,894	256,312	119	20	83	37.4
1936	983	355,469	393,674	51,038	11,688	67.9	671,925	259,762	135	1	107	44.0
Erie (incl. Chi. & Erie)...1937	2,277	710,193	748,380	36,923	30,541	65.7	1,855,667	695,320	236	27	202	43.4
1936	2,298	700,914	741,259	39,553	30,471	65.3	1,844,451	684,830	224	34	217	45.7
Grand Trunk Western.....1937	1,027	267,161	268,709	2,251	7,281	64.1	432,990	152,737	85	..	49	36.6
1936	1,027	257,364	258,561	1,869	6,667	64.6	394,218	139,531	84	1	55	39.3
Lehigh Valley 1937	1,303	331,442	361,954	45,287	12,347	66.8	765,696	325,337	132	5	142	50.9
1936	1,312	374,596	397,258	45,737	12,852	66.8	789,484	331,134	125	11	151	52.6
New York Central.....1937	10,693	2,742,463	2,873,181	164,698	91,296	61.6	5,920,401	2,402,020	972	179	336	22.6
1936	10,789	2,595,809	2,724,873	155,307	87,749	61.2	5,560,385	2,282,208	849	117	550	36.3
N. Y., Chi. & St. Louis...1937	1,672	496,782	504,801	6,759	17,580	65.4	1,054,644	404,228	171	7	17	8.7
1936	1,672	471,202	477,915	7,448	16,532	64.8	983,925	371,442	160	4	29	15.0
Pere Marquette 1937	2,081	362,923	369,671	7,124	9,699	61.8	619,525	233,572	112	8	26	17.8
1936	2,081	353,654	367,345	6,275	9,006	63.0	559,349	210,454	113	4	33	22.0
Pittsburgh & Lake Erie...1937	234	95,089	97,552	.....	3,540	63.1	297,740	170,576	41	11	19	26.8
1936	234	83,325	85,416	50	3,290	62.0	279,379	159,762	31	14	23	33.8
Wabash 1937	2,421	585,621	600,004	12,125	17,723	66.3	1,078,512	375,233	132	29	147	47.7
1936	2,435	617,751	628,363	12,870	18,518	66.7	1,033,548	371,239	149	27	112	38.9
Central Eastern Region:												
Baltimore & Ohio.....1937	6,330	1,576,307	1,912,364	194,936	48,903	63.7	3,318,689	1,513,804	720	79	472	37.1
1936	6,366	1,530,594	1,877,323	191,919	47,016	63.1	3,194,473	1,442,886	679	14	603	46.5
Central of New Jersey....1937	681	153,027	170,630	32,473	4,763	62.1	314,943	144,455	79	11	64	41.6
1936	681	145,709	166,812	31,574	4,664	61.3	312,348	143,156	56	12	79	53.7
Chicago & Eastern Illinois.1937	931	179,973	180,230	3,100	4,655	68.7	276,542	116,991	52	3	47	46.1
1936	931	163,433	163,892	2,688	4,221	68.9	247,050	104,199	49	3	55	51.4
Elgin, Joliet & Eastern....1937	435	118,561	120,224	2,164	2,996	59.7	235,714	117,786	57	1	24	29.3
1936	434	94,620	95,307	1,010	2,469	62.9	183,810	91,854	57	..	30	34.5
Long Island 1937	393	27,031	27,688	15,418	227	49.1	17,829	6,515	32	9	8	16.3
1936	393	30,669	31,290	16,314	271	48.9	21,720	8,115	31	4	15	30.0
Pennsylvania System 1937	10,015	3,309,362	3,794,465	412,891	118,640	63.1	8,068,376	3,660,377	1,492	279	544	23.5
1936	10,034	3,073,002	3,466,014	395,954	109,320	64.0	7,326,862	3,299,530	1,400	127	855	35.9
Reading 1937	1,445	422,999	462,618	52,328	11,693	62.0	831,042	390,629	194	27	110	33.2
1936	1,449	400,886	434,395	49,497	11,236	61.8	799,162	375,764	190	65	102	28.6
Pocahontas Region:												
Chesapeake & Ohio.....1937	3,050	850,793	889,767	38,537	38,896	56.7	3,283,968	1,788,053	401	44	108	19.5
1936	3,050	850,101	893,145	38,001	39,829	56.8	3,334,404	1,815,652	408	49	75	14.1
Norfolk & Western.....1937	2,180	703,564	747,267	36,340	29,830	59.2	2,449,168	1,306,539	330	23	15	4.1
1936	2,145	663,630	706,782	34,520	28,060	60.6	2,280,985	1,210,474	253	65	45	12.4
Southern Region:												
Atlantic Coast Line.....1937	5,117	561,544	564,317	7,699	12,099	63.0	679,965	252,301	233	54	89	23.7
1936	5,121	553,743	557,229	7,423	10,871	64.3	588,174	210,432	218	63	116	29.2
Central of Georgia.....1937	1,886	283,697	287,069	4,496	5,901	70.0	321,682	121,387	107	..	19	15.1
1936	1,886	266,607	267,851	4,333	5,501	70.6	296,817	107,922	97	..	27	21.8
Illinois Central (incl. Y. 1937	6,547	1,482,368	1,502,099	27,935	37,739	64.7	2,337,542	950,645	642	54	162	18.9
& M. V.).....1936	6,562	1,553,656	1,566,592	29,548	37,295	64.5	2,316,880	938,898	638	18	228	25.8
Louisville & Nashville.....1937	4,931	1,131,627	1,224,354	28,871	26,499	59.7	1,850,972	874,810	362	52	144	25.8
1936	4,989	1,050,447	1,145,808	27,390	24,981	60.3	1,741,268	825,912	339	24	211	36.8
Seaboard Air Line.....1937	4,295	491,842	511,828	2,952	12,037	67.9	671,995	257,495	214	36	62	19.9
1936	4,295	442,692	457,940	3,562	10,857	67.6	597,797	221,904	210	20	107	31.8
Southern 1937	6,596	1,327,822	1,349,268	20,254	29,851	67.5	1,660,429	655,862	508	4	256	33.3
1936	6,596	1,296,474	1,315,788	21,426	30,098	67.6	1,619,715	608,844	488	41	261	33.0
Northwestern Region:												
Chicago & North Western.1937	8,397	1,013,272	1,059,627	25,150	27,091	62.1	1,725,674	650,256	442	60	184	26.8
1936	8,355	1,095,932	1,147,287	31,156	28,925	61.8	1,823,496	650,813	451	50	201	28.6
Chicago Great Western...1937	1,450	280,642	281,997	8,799	8,009	61.9	496,375	182,455	68	..	25	26.9
1936	1,458	262,030	265,147	11,676	7,981	65.2	476,825	179,914	64	2	22	25.0
Chi., Milw., St. P. & Pac..1937	11,105	1,362,887	1,467,102	67,064	37,602	61.9	2,402,635	964,087	551	27	93	13.9
1936	11,120	1,481,816	1,592,351	71,541	40,418	60.7	2,565,977	992,463	500	59	120	17.7
Chi., St. P., Minneap. & Om.1937	1,636	238,300	251,543	11,905	5,210	64.7	325,237	131,083	112	17	19	12.8
1936	1,637	231,817	246,301	12,889	5,440	67.3	333,304	136,413	99	24	22	15.2
Great Northern 1937	7,997	841,595	837,167	29,410	29,869	58.3	2,157,024	1,007,448	330	57	161	29.4
1936	8,080	836,732	832,837	25,784	28,559	58.6	2,032,402	927,437	334	71	178	30.5
Minneap., St. P. & S. St. M.1937	4,278	419,074	428,265	6,562	9,682	64.3	591,815	249,862	125	..	24	16.1
1936	4,273	383,051	389,891	5,469	8,631	67.0	513,512	218,346	120	..	36	23.1
Northern Pacific 1937	6,429	719,713	761,509	42,124	22,851	64.6	1,396,752	557,458	377	19	74	15.7
1936	6,429	732,416	806,330	56,908	22,197	65.2	1,343,132	529,980	349	11	86	19.3
Central Western Region:												
Alton 1937	912	241,766	265,233	2,497	5,533	62.6	356,341	140,338	73	..	25	25.5
1936	928	217,707	228,258	1,656	5,071	63.4	324,335	122,552	75	4	21	21.0
Atch., Top. & S. Fe (incl. 1937	13,562	2,209,003	2,405,181	100,079	62,687	59.5	4,206,095	1,453,878	682	6	258	27.3
G.C. & S.F. & P. & S.F.).1936	13,228	1,975,769	2,139,354	99,786	56,821	61.3	3,674,315	1,206,962	575	79	317	32.6
Chicago, Burl. & Quincy..1937	8,934	1,264,441	1,313,649	49,447	36,126	62.5	2,222,655	956,878	451	12	81	14.9
1936	8,937	1,347,527	1,413,720	57,832	36,748	61.0	2,285,225	963,014	440	3	99	18.3
Chi., Rock I. & Pac. (incl. 1937	8,113	1,371,496	1,404,270	7,652	32,057	62.9	2,016,977	786,725	429	18	178	28.5
Chi., Rock I. & Gulf)...1936	8,179	1,235,119	1,265,114	8,003	28,686	65.0	1,736,218	664,666	390	16	299	42.4
Denv. & Rio Gr. Western.1937	2,576	309,185	338,862	35,678	7,636	67.9	485,501	207,458	166	9	27	13.4
1936	2,584	281,565	311,190	37,012	7,526	67.8	466,495	191,979	173	4	27	13.2
Southern Pac.—Pac. Lines.1937	8,607	1,697,086	1,866,628	239,873	54,768	62.0	3,484,076	1,115,038	629	2	130	17.1
1936	8,614	1,548,839	1,684,236	189,755	48,556	60.7	3,141,272	1,021,626	600	9	182	23.0
Union Pacific 1937	9,911	1,914,667	1,984,126	113,700	57,231	59.0	3,720,902	1,259,420	611	58	190	22.1
1936	9,828	1,835,717	1,908,860	121,796	56,649	60.5	3,622,010	1,216,380	595	47	216	25.2
Southwestern Region:												
Mo.-Kansas-Texas Lines ..1937	3,282	444,273	449,653	6,025	11,850	60.8	747,326	275,706	119	5	70	36.1
1936	3,282	393,684	398,444	6,248	10,824	63.3	656,286	239,422	101	23	76	38.0
Missouri Pacific 1937	7,144	1,240,432	1,303,727	29,590	35,182	64.7	2,196,613	908,956	417	40	82	15.2
1936	7,201	1,223,488	1,272,948	28,837	34,397	63.7	2,133,866	829,003	343	70	124	23.1
St. Louis-San Francisco...1937	4,888	843,155	852,782	12,587	17,572	60.8	1,138,687	466,566	294	36	77	18.9
1936	4,888	732,396	738,231	10,812	15,875	63.3	979,467	392,607	271	83	69	16.3
St. Louis Southw. Lines...1937	1,690	327,210	329,407	4,486	8,103	63.8	480,668	170,100	91	9	22	18.0
1936	1,733	260,024	261,549	3,371	7,223	63.0	424,955	146,770	99	11	8	6.8
Texas & New Orleans....1937	4,419	646,520	646,601	8,245	14,642	59.2	974,875	352,888	230	21	32	11.3
1936	4,416	546,355	547,185	10,615	12,146	61.5	773,662	277,469	220	20	58	19.5
Texas & Pacific.....1937	1,944	339,932	339,932	2,121	10,105	63.1	626,436	211,729	66	7	89	48.9
1936	1,945	313,445	313,445	1,805	9,138	59.1	580,651	188,983	69	52	95	44.0

Compiled by the Bureau of Statistics, Interstate Commerce Commission. Subject to revision.

1937, Compared with July, 1936, for Roads with Annual Operating Revenues Above $25,000,000

Region, road, and year	Number of freight cars on line: Home	Foreign	Total	Per cent unserviceable	Gross ton-miles per train-hour, excluding locomotives and tenders	Gross ton-miles per train-mile, excluding locomotives and tenders	Net ton-miles per train-mile	Net ton-miles per loaded car-mile	Net ton-miles per car-day	Car-miles per car-day	Net ton-miles per mile of road per day	Pounds of coal per 1,000 gross ton-miles, including locomotives and tenders	Locomotive-miles per locomotive-day
New England Region:													
Boston & Albany.....1937	2,198	3,841	6,039	26.0	20,951	1,246	438	19.9	309	23.6	5,196	159	57.8
1936	2,325	3,696	6,021	26.2	21,481	1,278	422	17.6	266	23.0	4,609	151	52.6
Boston & Maine.....1937	8,129	6,524	14,653	14.2	25,813	1,863	689	19.6	393	28.1	3,076	96	44.1
1936	8,171	6,555	14,726	17.2	25,362	1,885	704	20.0	394	28.0	3,014	99	39.0
N. Y., New Hav. & Hartf.1937	8,218	11,231	19,449	12.1	26,477	1,851	678	19.4	381	28.9	3,762	96	62.9
1936	12,386	9,617	22,003	21.8	26,131	1,852	668	19.5	315	24.5	3,637	99	55.2
Great Lakes Region:													
Delaware & Hudson.....1937	9,092	3,443	12,535	4.0	29,631	2,047	959	28.0	546	29.1	8,132	101	41.8
1936	8,912	3,300	12,212	5.1	29,284	2,084	985	28.6	556	29.0	7,927	104	39.7
Del. Lack. & Western.....1937	12,928	6,234	19,162	13.3	31,567	1,887	729	21.8	433	28.7	8,403	127	70.1
1936	13,790	6,008	19,798	17.1	31,641	1,917	741	22.2	421	27.9	8,524	124	64.8
Erie (incl. Chi. & Erie)...1937	15,505	16,328	31,833	5.3	43,872	2,636	988	22.8	715	47.8	9,851	89	60.1
1936	17,075	19,477	36,552	3.3	43,374	2,652	985	22.5	616	42.0	9,613	91	58.8
Grand Trunk Western.....1937	4,676	7,067	11,743	17.8	32,042	1,635	577	21.0	417	31.0	4,797	88	71.5
1936	4,139	6,762	10,901	16.2	30,418	1,551	549	20.9	407	30.1	4,383	88	66.1
Lehigh Valley 1937	10,749	9,426	20,175	9.1	40,515	2,340	994	26.3	517	29.3	8,054	107	50.5
1936	11,570	9,409	20,979	6.8	38,174	2,156	904	25.8	513	29.8	8,142	111	53.6
New York Central.....1937	89,526	69,295	158,821	14.5	37,153	2,183	886	26.3	484	29.9	7,246	94	74.6
1936	102,247	64,386	166,633	21.5	36,188	2,166	889	26.0	443	27.8	6,824	95	69.1
N. Y., Chi. & St. Louis...1937	6,136	8,996	15,132	3.2	38,730	2,126	815	23.0	900	59.9	7,799	82	91.2
1936	5,795	9,065	14,860	3.4	37,925	2,091	789	22.5	835	57.4	7,166	81	87.8
Pere Marquette 1937	7,595	6,807	14,402	5.0	27,845	1,714	646	24.1	511	34.4	3,621	82	90.7
1936	7,718	6,118	13,836	5.4	26,721	1,583	596	23.4	472	32.1	3,262	88	87.9
Pittsburgh & Lake Erie...1937	8,434	10,686	19,120	30.3	46,399	3,152	1,806	48.2	292	9.6	23,515	83	46.9
1936	14,810	11,710	26,520	40.4	47,578	3,380	1,933	48.6	196	6.5	22,024	83	44.1
Wabash 1937	13,227	9,236	22,463	6.1	35,759	1,782	640	20.9	560	40.3	4,946	104	71.8
1936	11,209	9,969	21,178	4.2	34,827	1,766	614	20.3	579	43.5	4,971	98	70.4
Central Eastern Region:													
Baltimore & Ohio.....1937	55,927	30,785	86,712	11.1	28,057	2,134	974	31.0	567	28.8	7,714	128	56.9
1936	67,780	27,826	95,606	18.1	27,608	2,118	957	30.7	484	25.0	7,311	130	55.3
Central of New Jersey....1937	9,618	8,760	18,378	29.1	26,493	2,160	991	30.3	246	13.1	6,843	131	55.8
1936	11,181	9,932	21,113	32.1	26,252	2,239	1,026	30.7	221	11.8	6,781	135	59.8
Chicago & Eastern Illinois.1937	2,953	3,414	6,367	6.4	28,204	1,540	651	25.1	590	34.2	4,054	112	61.3
1936	3,258	3,532	6,790	8.6	27,190	1,516	639	24.7	505	29.7	3,610	120	53.1
Elgin, Joliet & Eastern....1937	8,660	6,728	15,388	3.7	18,505	2,025	1,012	39.3	258	11.0	8,735	101	67.5
1936	7,757	4,596	12,353	5.3	17,929	1,982	990	37.2	237	10.1	6,826	100	49.0
Long Island 1937	396	2,499	2,895	3.5	5,137	681	249	28.7	68	4.8	535	348	40.9
1936	676	2,720	3,396	2.3	5,430	735	275	29.9	71	4.8	667	311	44.5
Pennsylvania System 1937	181,470	71,161	252,631	16.4	35,876	2,486	1,128	30.9	470	24.1	11,790	108	65.7
1936	193,521	64,843	258,364	17.8	34,102	2,430	1,094	30.2	414	21.4	10,607	109	58.7
Reading 1937	23,483	12,494	35,977	8.2	25,684	1,970	926	33.4	356	17.2	8,720	127	53.4
1936	25,441	11,397	36,838	11.4	25,053	1,998	940	33.4	330	16.0	8,365	130	49.0
Pocahontas Region:													
Chesapeake & Ohio.....1937	53,736	13,629	67,365	0.9	57,404	3,892	2,119	46.0	921	35.3	18,911	67	59.5
1936	38,938	14,068	53,006	1.4	55,875	3,961	2,157	45.6	1,089	42.0	19,203	67	62.1
Norfolk & Western.....1937	31,940	5,262	37,202	1.5	52,954	3,523	1,879	43.8	1,081	41.6	19,333	90	74.5
1936	30,188	5,872	36,060	1.6	50,318	3,463	1,838	43.1	1,058	40.5	18,204	95	71.3
Southern Region:													
Atlantic Coast Line.....1937	14,534	6,952	21,486	24.2	21,755	1,213	450	19.4	275	22.1	1,326	110	49.0
1936	18,302	5,961	24,263	26.4	19,536	1,065	381	20.9	362	27.6	1,591	105	52.6
Central of Georgia.....1937	3,548	4,071	7,619	2.2	21,517	1,143	431	20.6	495	34.5	2,076	120	80.1
1936	3,403	3,444	6,847	3.8	20,411	1,120	407	19.6	470	33.9	1,846	116	75.9
Illinois Central (incl. Y.	1937	28,933	20,311	49,244	14.3	26,670	1,588	646	25.2	624	38.3	4,684	117	61.8
& M. V.).....1936	35,079	20,634	55,713	28.0	25,573	1,501	608	25.2	543	33.4	4,615	119	63.5
Louisville & Nashville.....1937	34,245	10,040	44,285	12.7	25,481	1,638	774	33.0	649	32.9	5,723	116	77.3
1936	36,852	9,976	46,828	23.7	25,475	1,660	787	33.1	568	28.5	5,340	116	71.2
Seaboard Air Line.....1937	9,403	5,919	15,322	2.0	22,916	1,394	534	21.4	551	37.9	1,934	119	59.2
1936	8,801	4,734	13,535	2.3	22,646	1,371	509	20.4	518	37.5	1,667	116	49.4
Southern 1937	19,842	18,660	38,502	12.0	21,937	1,258	497	22.0	539	36.3	3,208	136	60.5
1936	22,541	17,387	39,928	17.0	21,315	1,256	472	20.2	493	36.0	2,978	136	57.2
Northwestern Region:													
Chicago & North Western.1937	36,575	25,204	61,779	8.0	26,269	1,751	660	24.0	361	24.2	2,498	107	57.4
1936	35,333	26,617	61,950	9.4	25,604	1,670	596	22.5	344	24.8	2,513	109	59.8
Chicago Great Western...1937	1,973	4,455	6,428	2.3	32,536	1,771	651	22.8	959	68.0	4,059	117	105.9
1936	1,675	5,172	6,847	2.4	31,116	1,824	688	22.5	919	62.6	3,981	115	108.7
Chi., Milw., St. P. & Pac..1937	42,733	22,033	64,766	3.0	28,124	1,774	712	25.6	489	30.9	2,801	110	80.6
1936	41,579	24,862	66,441	2.6	27,666	1,743	674	24.6	488	32.7	2,879	112	86.1
Chi., St. P., Minneap. & Om.1937	3,666	5,908	9,574	8.2	18,672	1,395	562	25.2	465	28.5	2,585	101	62.3
1936	3,070	6,770	9,840	10.2	18,640	1,451	594	25.1	468	27.8	2,688	99	63.4
Great Northern 1937	36,458	12,254	48,712	7.4	39,164	2,583	1,206	33.7	686	34.8	4,064	92	56.0
1936	36,221	13,215	49,436	9.1	37,564	2,449	1,118	32.5	615	32.4	3,703	91	51.4
Minneap., St. P. & S. St. M.1937	11,896	5,292	17,188	3.8	22,190	1,421	600	25.8	466	28.1	1,884	90	95.0
1936	12,286	5,132	17,418	5.8	21,278	1,344	572	25.3	406	24.0	1,648	92	83.5
Northern Pacific 1937	25,797	5,963	31,760	8.3	30,293	1,950	778	24.4	566	35.9	2,797	130	60.3
1936	26,592	6,792	33,384	10.5	28,680	1,846	728	23.9	514	33.0	2,659	136	68.2
Central Western Region:													
Alton 1937	2,337	6,572	8,909	17.7	34,139	1,489	587	25.4	515	32.4	4,966	112	92.6
1936	2,337	6,739	9,076	23.0	33,025	1,497	565	24.2	436	28.5	4,260	106	79.9
Atch., Top. & S. Fe (incl.	1937	67,118	18,347	85,465	7.7	34,709	1,913	661	23.2	550	39.8	3,458	110	91.0
G.C. & S.F. & P. & S.F.).1936	64,337	14,408	78,745	10.9	34,118	1,866	613	21.2	490	37.8	2,943	110	79.0
Chicago, Burl. & Quincy..1937	26,619	22,176	48,795	5.1	28,678	1,766	760	26.5	653	39.4	3,455	105	87.6
1936	25,782	19,024	44,806	7.2	28,097	1,707	719	26.2	704	44.0	3,476	109	94.2
Chi., Rock I. & Pac. (incl.	1937	20,874	14,281	35,155	5.8	26,452	1,476	576	24.5	692	44.9	3,128	112	76.9
Chi., Rock I. & Gulf)...1936	22,760	13,629	36,389	9.7	24,623	1,409	539	23.2	576	38.2	2,621	120	61.3
Denv. & Rio Gr. Western.1937	11,649	4,990	16,639	5.0	25,275	1,576	673	27.2	426	23.1	2,599	147	64.0
1936	12,625	4,868	17,493	6.5	25,934	1,664	685	25.5	371	21.4	2,397	150	59.4
Southern Pac.—Pac. Lines.1937	32,939	32,112	65,051	5.9	32,610	2,068	686	21.1	562	42.9	4,329	100	92.5
1936	31,876	30,270	62,146	7.4	32,087	2,046	665	21.0	542	42.4	3,826	100	81.8
Union Pacific 1937	40,239	24,647	64,886	10.3	39,476	1,962	664	22.0	669	51.5	4,099	113	82.6
1936	40,114	23,077	63,191	10.9	39,943	1,985	667	21.5	652	50.2	3,992	112	79.0
Southwestern Region:													
Mo.-Kansas-Texas Lines ..1937	4,305	6,309	10,614	1.6	30,624	1,687	622	23.3	802	56.7	2,710	80	79.8
1936	4,723	5,186	9,909	6.6	30,334	1,670	609	22.1	756	54.0	2,353	79	69.8
Missouri Pacific 1937	16,142	23,222	39,364	2.6	29,271	1,784	738	25.8	710	42.5	4,104	112	86.4
1936	14,994	22,956	37,950	3.1	29,688	1,753	681	24.1	678	44.2	3,714	111	84.3
St. Louis-San Francisco...1937	16,299	5,910	22,209	6.8	26,005	1,361	558	26.6	635	39.4	3,079	121	72.8
1936	16,972	7,994	24,966	6.9	25,472	1,340	537	24.7	497	31.8	2,591	120	61.0
St. Louis Southw. Lines...1937	2,323	3,496	5,819	3.1	28,157	1,471	521	21.0	911	68.0	3,247	93	94.5
1936	2,678	3,230	5,908	3.5	30,304	1,638	566	20.3	742	58.0	2,732	87	75.9
Texas & New Orleans....1937	6,897	11,405	18,302	6.4	28,380	1,519	550	24.1	593	41.6	2,576	84	78.1
1936	7,033	10,342	17,375	7.8	25,664	1,426	512	22.8	490	34.9	2,027	87	64.1
Texas & Pacific.....1937	2,687	5,059	7,746	2.8	34,121	1,844	623	21.0	829	62.8	3,513	76	61.8
1936	2,685	4,851	7,536	3.9	32,404	1,856	604	20.7	779	63.8	3,134	84	51.0

NEW POWER NEW PROFITS

The first of fifty new and improved Hudson type locomotives built for use on the Twentieth Century Limited and other famous trains of the New York Central System.

Weight on Drivers	196,000 pounds
Weight of Engine	360,000 pounds
Cylinders	22½ x 29 inches
Diameter of Drivers	79 inches
Boiler Pressure	275 pounds
Maximum Tractive Power (Engine & Booster)	55,540 pounds